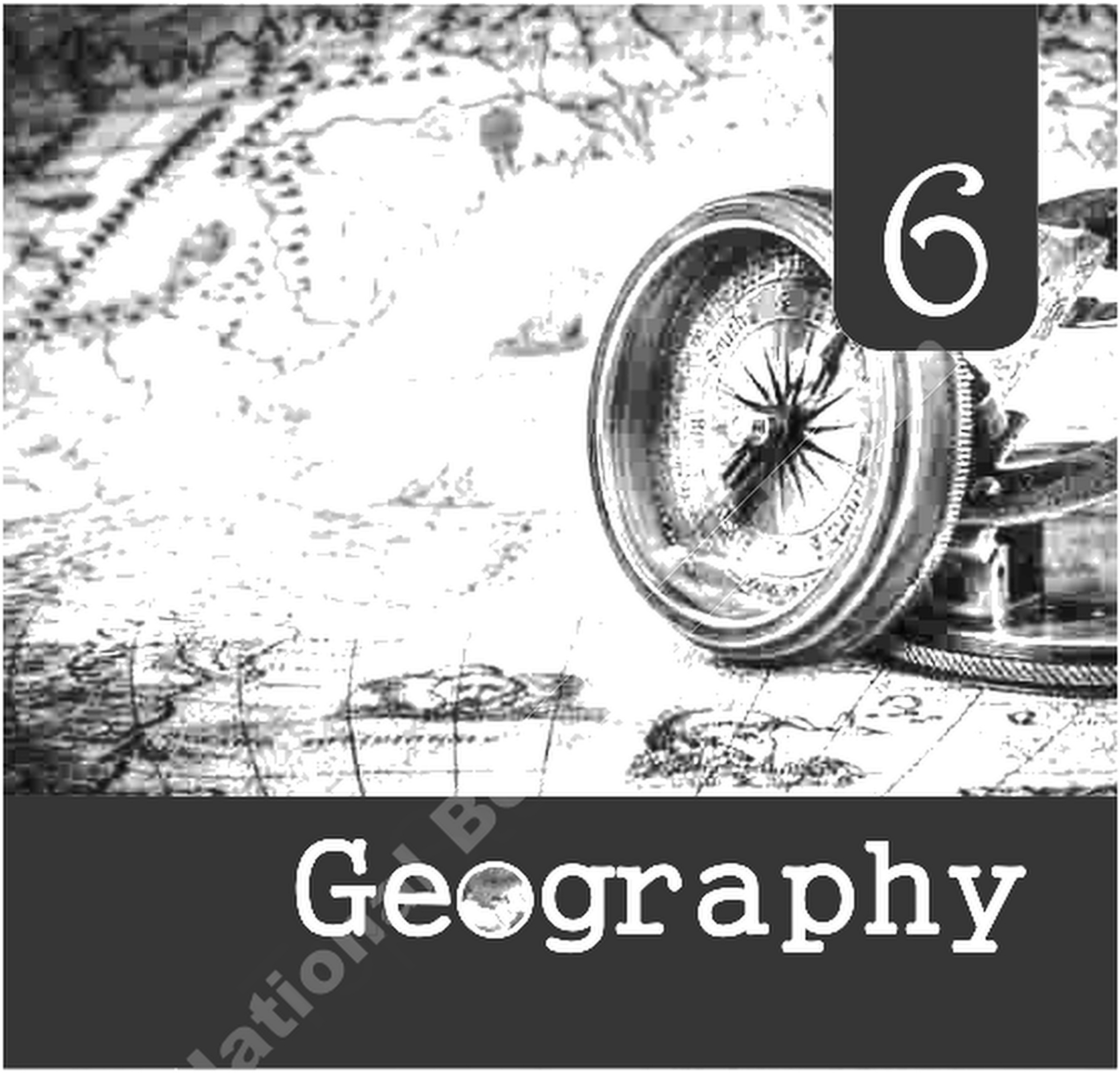

Geography

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Grade 6

Geography

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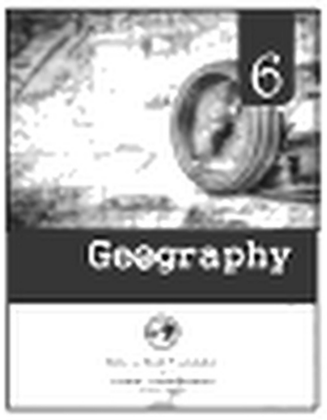
OUR MOTTO

• Standards • Outcomes • Access • Style

Textbook of
Geography Grade - 6



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Preface

Geography has once again been introduced as an independent subject in schools. The discipline of geography is fascinating as it delves into exploring the physical and human relationships on the face of the Earth. Students begin to understand and learn the ways in which people use the Earth and its resources in the quest for improving their lives. It explores how these aspirations impact not only the resources on the ground, those underground and deep under the sea but also the environment and the layers of atmosphere far above the earth. The rich content of geography makes sense of how the earth and its physical features as well as the space reaching far beyond our earth has constantly been changing and has come to be understood over time.

This new textbook of Geography textbook for Grade VI has been developed according to the revised curriculum of 2017, in the light of the standards for quality textbooks. In line with the spirit of the new Geography curriculum, the textbook presents an enlarged focus on developing understanding of the relationship between the physical and human relationship; along with due coverage of the elements that make the physical and human elements.

The subject content is aesthetically presented and supported by coloured illustration and multiple interspersed as well as end of the chapter activities. Inclusion of activity based mapping skills through sketching and use of smart devices and software applications like Global Positioning Systems and Google maps add the much needed hands on dimension critical to the learning process. In addition to the enhanced focus on connecting the knowledge and skills development of learners to real life elements, this new edition of Grade VI textbook also presents illustrative material and test items to serve as learning reinforcement.

The National Book Foundation endeavors to keep quality enhancement at the heart of textbooks development. Likewise, it strives to keep improving its textbooks by incorporation of feedback and suggestions from the students, teachers and the community in subsequent editions of its new textbooks. As always the National Book Foundation looks forward to receiving feedback on this new textbook for Geography grade VI to align it more closely to the needs of the learners.

National Book Foundation

Acknowledgments

For many an illustrative material used in this book, the author's are grateful to the Federal and Provincial Departments, national and foreign organizations, agencies and individuals. Author's indebtedness to all of them is duly acknowledged.

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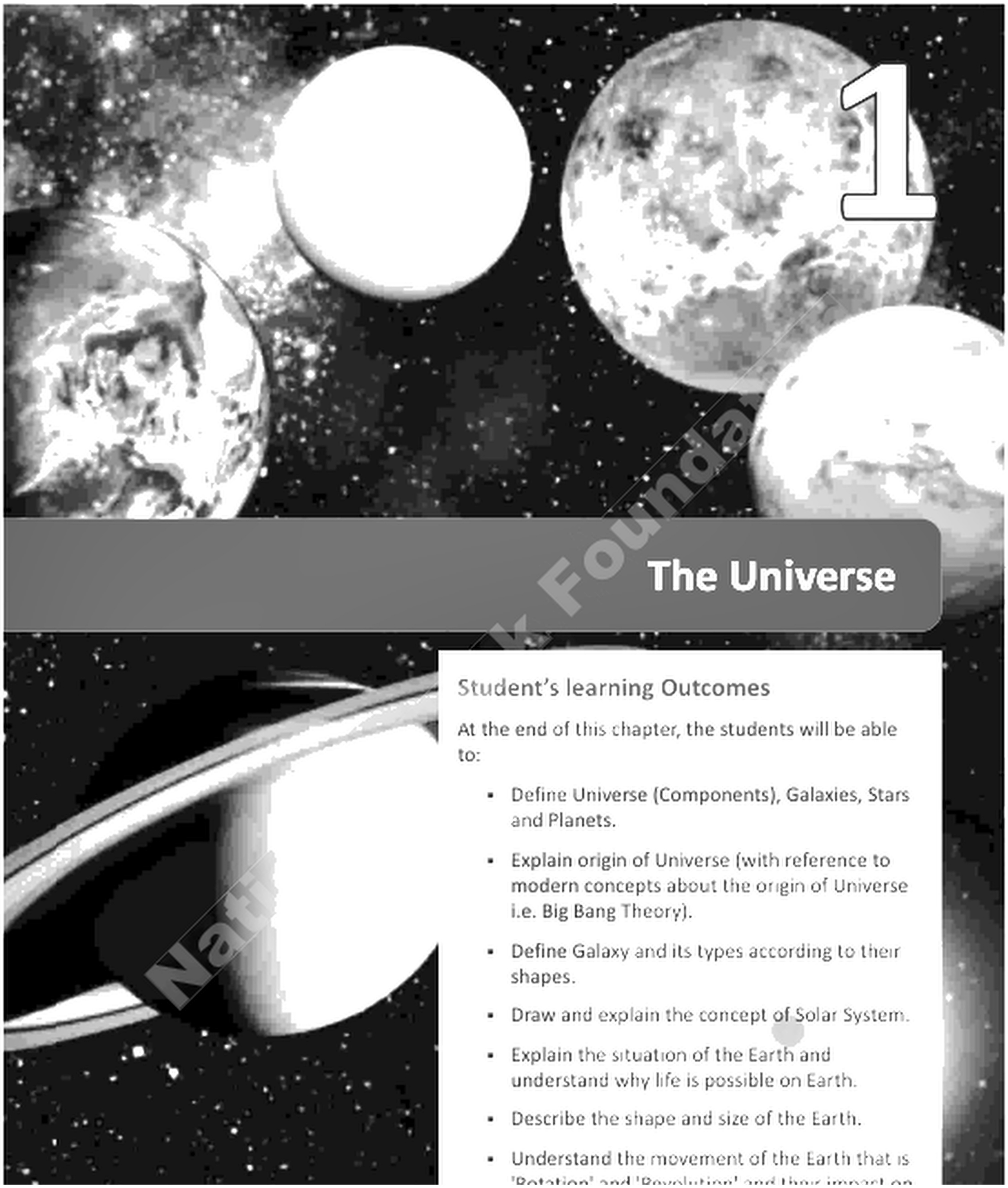


1

The Universe

Student's learning Outcomes

At the end of this chapter, the students will be able to:

- Define Universe (Components), Galaxies, Stars and Planets.
- Explain origin of Universe (with reference to modern concepts about the origin of Universe i.e. Big Bang Theory).
- Define Galaxy and its types according to their shapes.
- Draw and explain the concept of Solar System.
- Explain the situation of the Earth and understand why life is possible on Earth.
- Describe the shape and size of the Earth.
- Understand the movement of the Earth that is 'Rotation' and 'Revolution' and their impact on

Unit 1

The Universe

Have you ever gazed up at the sky at night and wondered how far the twinkling stars and moon are from us and what lies beyond them? Can life exist anywhere other than earth? Let's dive in to solve this mystery!

1.1 The Universe

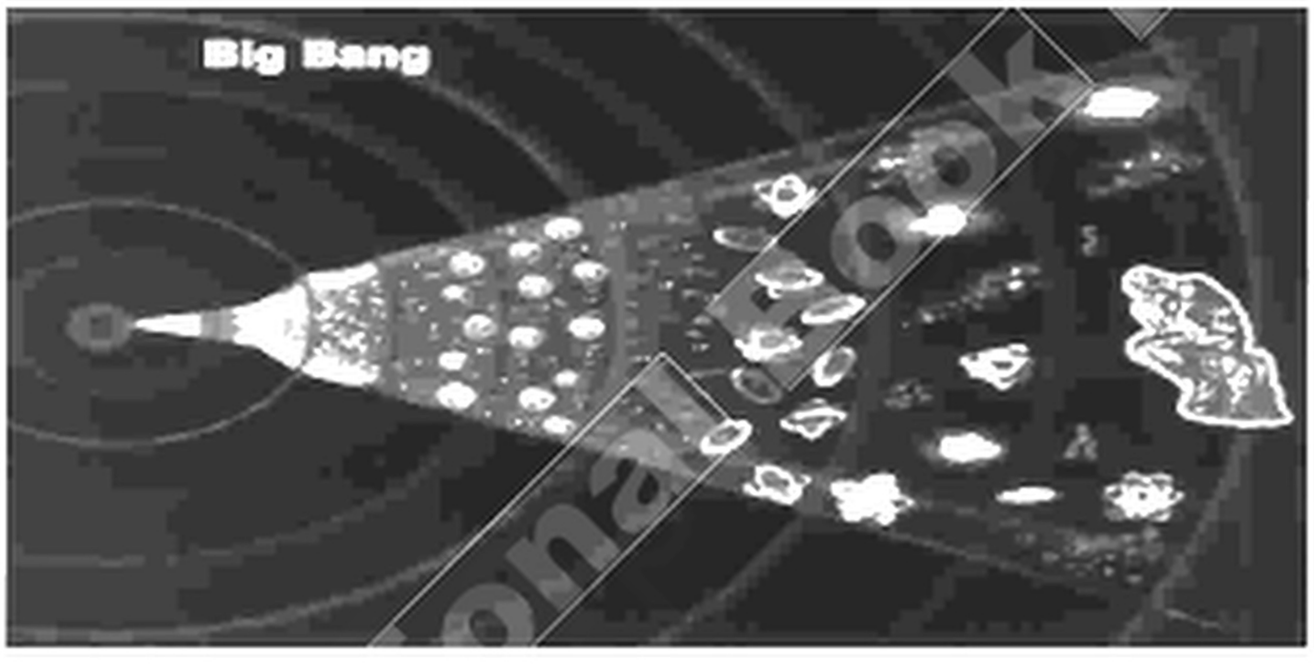
The universe is a vast space, stretched away from us in all directions. Its limits cannot be defined. All celestial bodies such as galaxies, stars, the sun, and the moon are components of universe.

Celestial Bodies

Celestial bodies are the natural shining objects in space such as the sun, moon, planets, stars, and the asteroids. They are very far from us. Celestial bodies are also called the heavenly bodies.

1.2 Origin of Universe

Have you ever wondered how the universe came into being? According to the most widely accepted theory, the universe started approximately 15 billion years ago as a result of a gigantic explosion from a single point of infinite matter and energy. This explosion is termed as "**The Big Bang**".



Light Year

Light year is the distance that light takes to travels in one year. It is about 9 trillion kilometers. Light travels from sun to Earth in 8 minutes and 20 seconds with the speed of 300,000 kms per second.

1.3 Galaxies and their Types

Galaxies are the building blocks of universe. There are billions and billions (countless) of galaxies in the universe. In each galaxy, there are billions of stars. The **Milky Way** is our home galaxy which was formed approximately 5 billion years after **The Big Bang**. The sun is just one of the billions of stars within the Milky Way.


The Spiral Milky Way

The Universe

Galaxies are of different shapes and sizes. The three main types are:

1. **Spiral**- They look like flat disks with a prominent center.
2. **Elliptical**- They are more rounded, often longer in one direction.
3. **Irregular**- They appear neither disk-like nor rounded and are irregular in shape.

Stars:

Stars are luminous heavenly bodies. They are huge balls of hot and glowing gases. They have their own heat and light. There are millions of stars present in the sky but they are very far from the earth due to which they seem like tiny specks of light. The sun is the most important star close to Earth.

1.4 Sun and the Solar System

The nearest star we know and see daily is the sun. It is a spinning ball of very hot gases. Our solar system consists of the sun, and the eight planets. The Sun lies in the centre of the solar system and the eight planets revolve around it in fixed paths called orbits due to the strong gravitational pull of the sun. The planets also rotate around their axis. Planets do not have their own light and they reflect the light of the sun.

In order of their distance from the sun; the planets are **Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune**. The planets have natural satellite called moons revolving around them. Moon is the natural satellite of Earth.

Asteroids

Asteroids are small Rocky objects that orbit the sun. The Greatest number of asteroids are found in a circle between the planets Mars and Jupiter.
This region is called Asteroidal Belt.

The Universe

The Solar System

Find out more!!

Learn more about the planets and compare them with the Earth on http://www.nasa.gov.

Planets	Diameter (km)	Distance from Sun (km)	Number of Moons	A day (Rotation)	A year (Revolution)
Mercury	4,878	57,910,000	-	59 Earth days	88 Earth days
Venus	12,102	10,820,000	-	243 Earth days	225 Earth days
Earth	12,756	149,597,870	1	24 hours	365.2 Earth days
Mars	6,786	227,940,000	2	24.6 Earth hours	686.9 Earth days
Jupiter	142,984	778,330,000	67	9.6 Earth hours	11.8 Earth years
Saturn	120,536	1,426,980,000	62	10.2 Earth hours	29.4 Earth years
Uranus	51,118	2,870,990,000	27	17.9 Earth hours	84 Earth years
Neptune	49,528	4,497,070,000	14	19.2 Earth hours	164.7 Earth years

Interesting Fact about Venus

Venus is considered as 'Earth's-twin because their size, shape and composition are very similar. However, Venus does not have life because its surface temperature is extremely hot as it is closer to the sun as compared

What happened to Pluto?

Till recently (August 2006), Pluto was also considered a planet. However, it has now been given the status of a

1.5 The situation of the Earth within the solar system and why life is possible on Earth

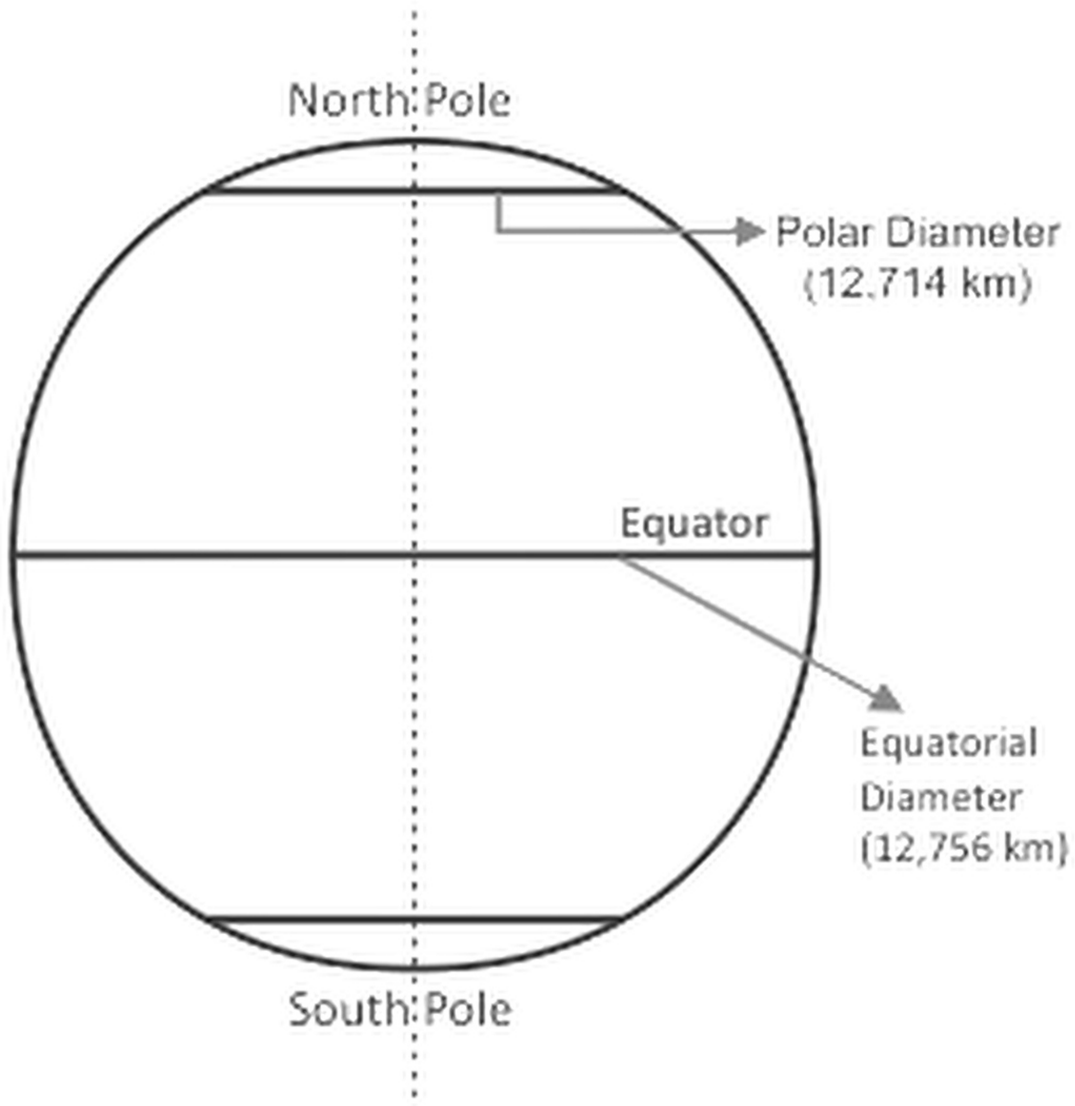
On Earth, everything is just suitable for life to exist. The temperature is just right not too cold and not very hot. More than two third or almost 71% of the earth is coverd by water that keeps the temperature normal.

Earth is the fifth-largest planet in size, and third in order of distance from the sun. Its average distance from the sun is about 93 million miles(149 million kms).

Earth looks a blue marble with white swirls and areas of brown, yellow, green and white. The swirls are clouds. The areas of brown, yellow and green are land. And the areas of white are ice and snow.

1.6 The shape and size of the Earth

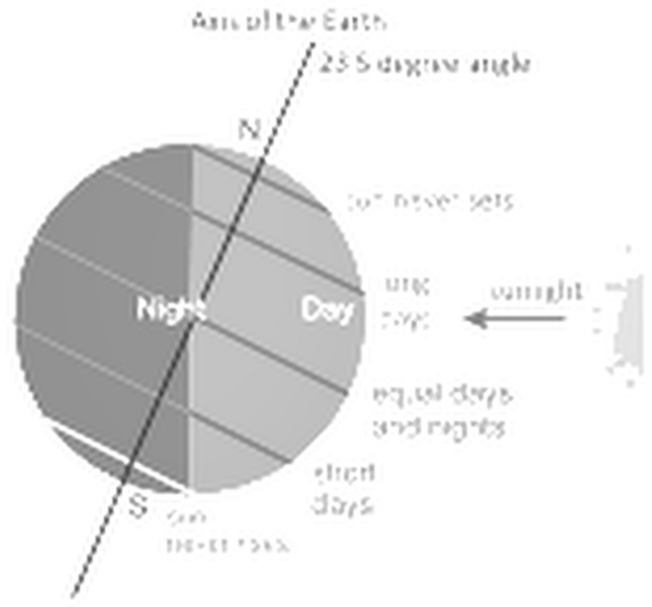
The shape of the earth like all heavenly bodies is spherical. The earth is bulged out from the equator and flattened at the poles. This particular shape of the earth is called "**Geoid**". The shape is due to the rotation of the earth. The diameter of the equator is greater than the polar diameter.



Do you Know?
The Earth's equatorial diameter is 12,756 Km approximately and its polar diameter is

The Universe

1.7 Movements of the Earth and their impact



Rotation and revolution are the two simultaneous movements of the Earth

1. Rotation of the Earth:

The spinning of the earth on its axis is called "Rotation". Axis is an imaginary line passing through the center of the earth joining North and South poles. Axis is tilted at an angle of 23.5 degree to the plane of its orbit. The earth completes one rotation on its axis in 24 hours.

The formation of day and night is related to rotation of the earth. The side of the earth that faces the sun has day time and the side that faces away from the sun has night time. (As shown in the diagram). Note that the rotation of the earth is from west to east that is why the sun always rises in the east.

DO YOU REMEMBER?

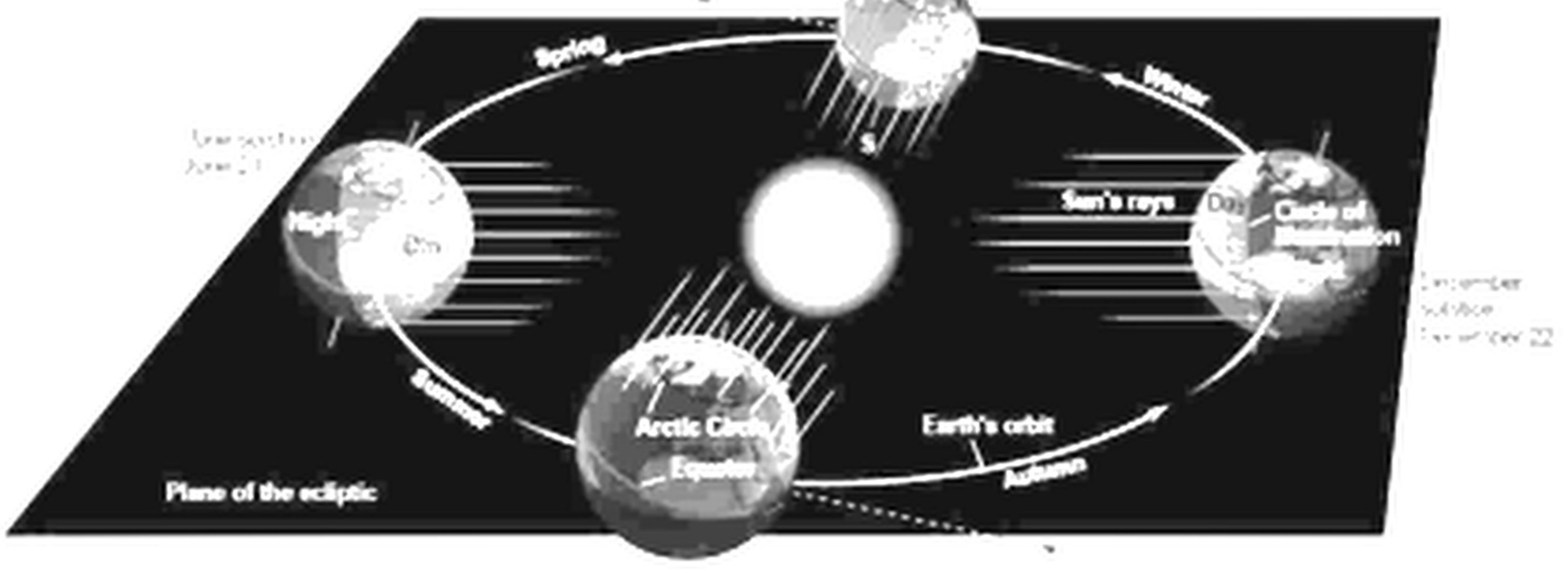
360 lines of longitude /meridians
Time Difference: 1 meridian = 4 minutes
15 meridians x 4 minutes = 60 minutes
Therefore, 1 hour = 60 minutes
360meridians /60 minutes = 24 hours

2. Revolution of the Earth:

As earth rotates on its axis, it also revolves around the sun. Even though you cannot feel the earth's movement, it is traveling around the sun at an average speed of 29.8 km per second. This movement of the earth around the sun is called "Revolution".

The earth completes one revolution around the sun in 365 days and 6 hours or almost one year. This revolution of the earth around the sun gives us four seasons i.e. winter, spring, summer and autumn shown in the diagram.

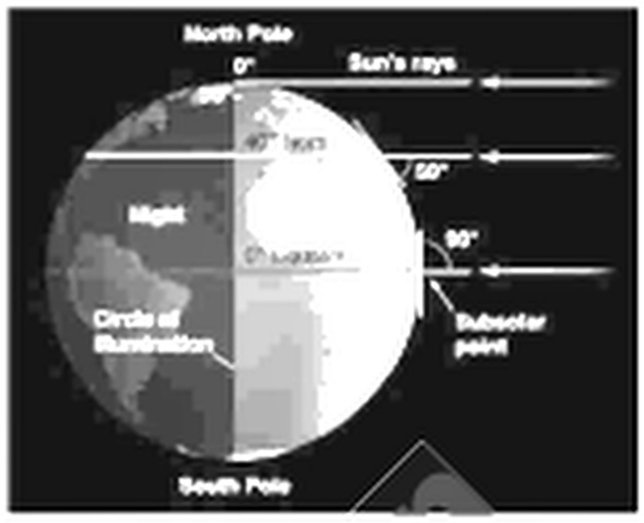
The four seasons of the earth



The Universe

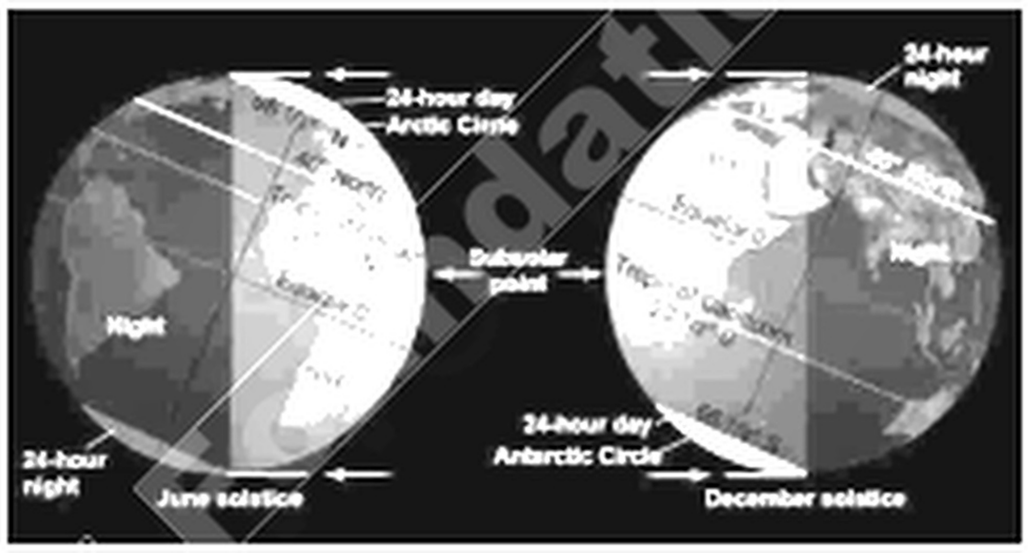
The revolution of the earth around the sun give rise to four seasonal conditions called

a. **Equinox** – This shows the beginning of spring and autumn, when days and nights are equal.
   i. **Spring Equinox** (21st March)
   ii. **Autumn Equinox** (23rd September)



Equinox Condition of the Earth

b. **Solstice** – The time of the year when the sun is as far north or as far south of the equator as possible
   i. **Summer Solstice**: On 21st June when the tilt of the North Pole is greatest and we have longest day in the Northern Hemisphere.
   ii. **Winter Solstice**: North Pole is far away from the sun and we have the shortest day on 22nd December in the Northern Hemisphere.



Solstice Condition of the Earth

These conditions are opposite in the Southern Hemisphere.

INFORMATION BOX

A calendar year is only 365 days but there is a Leap Year every four years. The 0.25 days(6 hours) are added to make one day. The extra day is added at the end of February, giving it 29 days instead of usual 28 days.

Video Link: video.nationalgeographic.com/video/101-video-shorts/00c001ee-8bcf-dd18-afde-8ddfda230000

Activity

Ask your teacher the meaning of the word Equinox and Solstice.

There are 8 planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

Which of the planet in solar system has life and

EARTH BY NUMBERS

Day

24 hours

Year

365.25

Radius

3,959 miles (6,371 km)

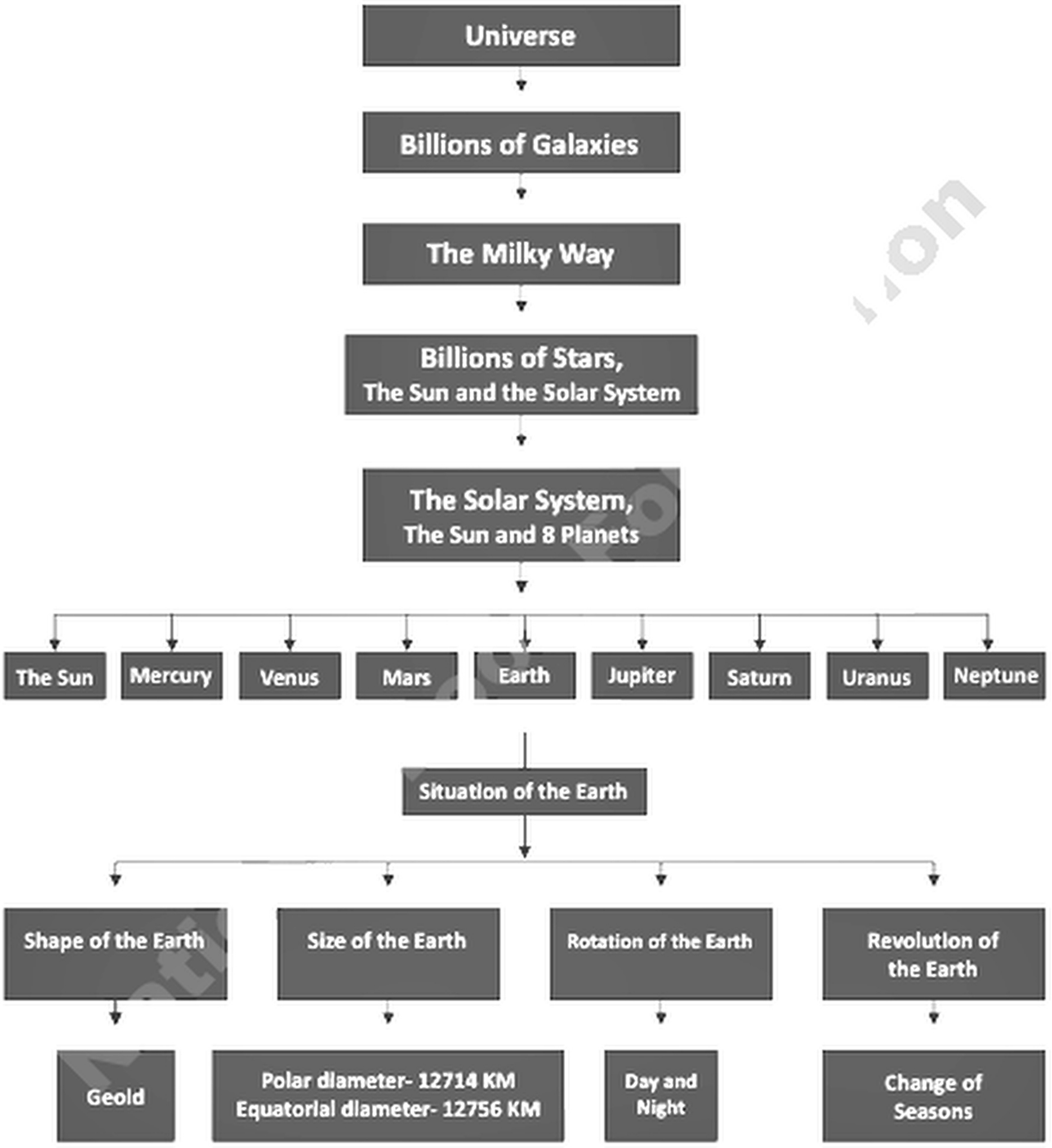
Planet Type

Terrestrial

Moons

The Universe

At a Glance



Exercises

Fill in the Blanks

1. Sun is the .....of the solar system.
2. ..... is the closest celestial body to our earth.
3. Planets revolve around the sun in fixed paths called .....
4. ..... is the nearest galaxy to the Milky Way.
5. Each revolution around the sun, the earth covers a distance of about.....
6. The seasons are caused by the.....of the earth.
7. The earth completes one orbital revolution around the sun in.....
8. Pluto has now been given the status of .....

Choose the Correct Option

1. Which is the third nearest planet to the Sun?

   a- Earth b- Mercury c- Mars

2. Bodies revolving around the planets are called.

   a- Asteroids b- Stars c- Satellites

3. The Milky Way is an example of:

   a- elliptical galaxy b- Spiral galaxy c- Irregular galaxy

4. The pole star indicates the direction of:

   a- South b- North c- West

5- Which statement is true about light year?

   a. It is a measure of distance b. It is a measure of time

   c. It is used to measure distances in solar system

6- Which order is correct starting from biggest to smallest?

   a. Galaxy, Universe, Solar system, Planets

   b. Universe, Galaxy, Solar system, Planets

   c. Solar System, Universe, Galaxy, Planets

The Universe

Give Brief Answers of the Following Questions

1. What is galaxy? Name the different types of galaxies according to their shape and size.
2. How does a planet differ from a star?
3. What is the shape and size of the earth?
4. What are Asteroids?
5. What is meant by artificial satellites?

Give Detailed Answers of the Following Questions

1. Describe Rotation and Revolution of the Earth with and show impacts with the help of diagram.
2. Define universe, how it came into being and its components and origin.

Activity

- Demonstrate a solar system showing the relative sizes of the planets and distances by using a thermopore sheet, chart papers, and Popsicle sticks to mark the positions of the planets .

For more fun activities visits http://www.pinterest.com.

EARTH DAY

Students will browse the internet and find out more about Earth Day

Earth day is celebrated every year on 22 April to protect

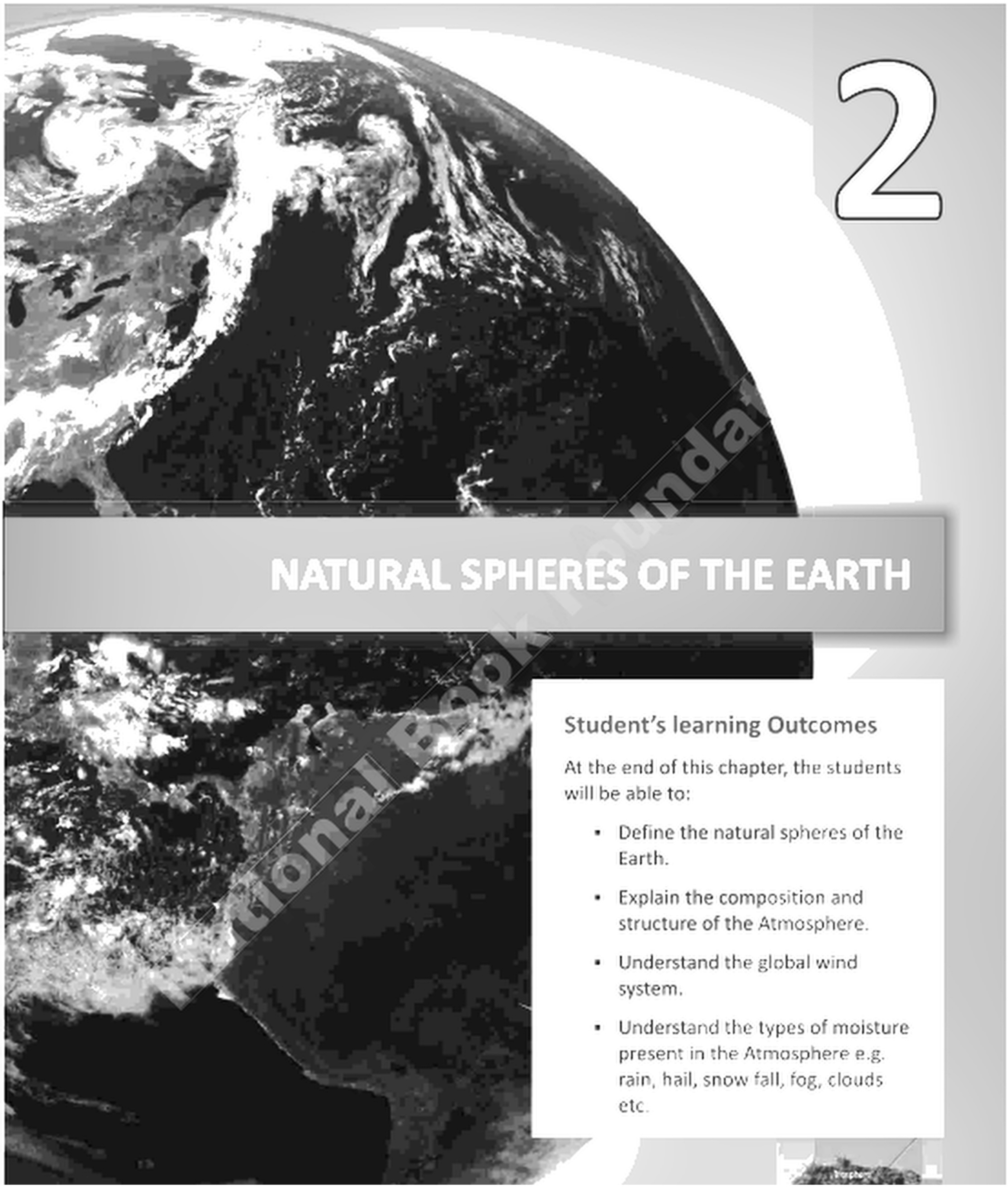
God's Greatest Creations, Humans, Bio diversity and the Planet

that we

ALL LIVE ON

Glossary

- Equator: Equator is an imaginary line which divides the earth into two equal parts.
- Diameter: A straight line that reaches from one point on the edge of a round shape or object, through its centre, to a point on the opposite edge.
- Bulge: Swell
- Terrestrial: Earth like



2

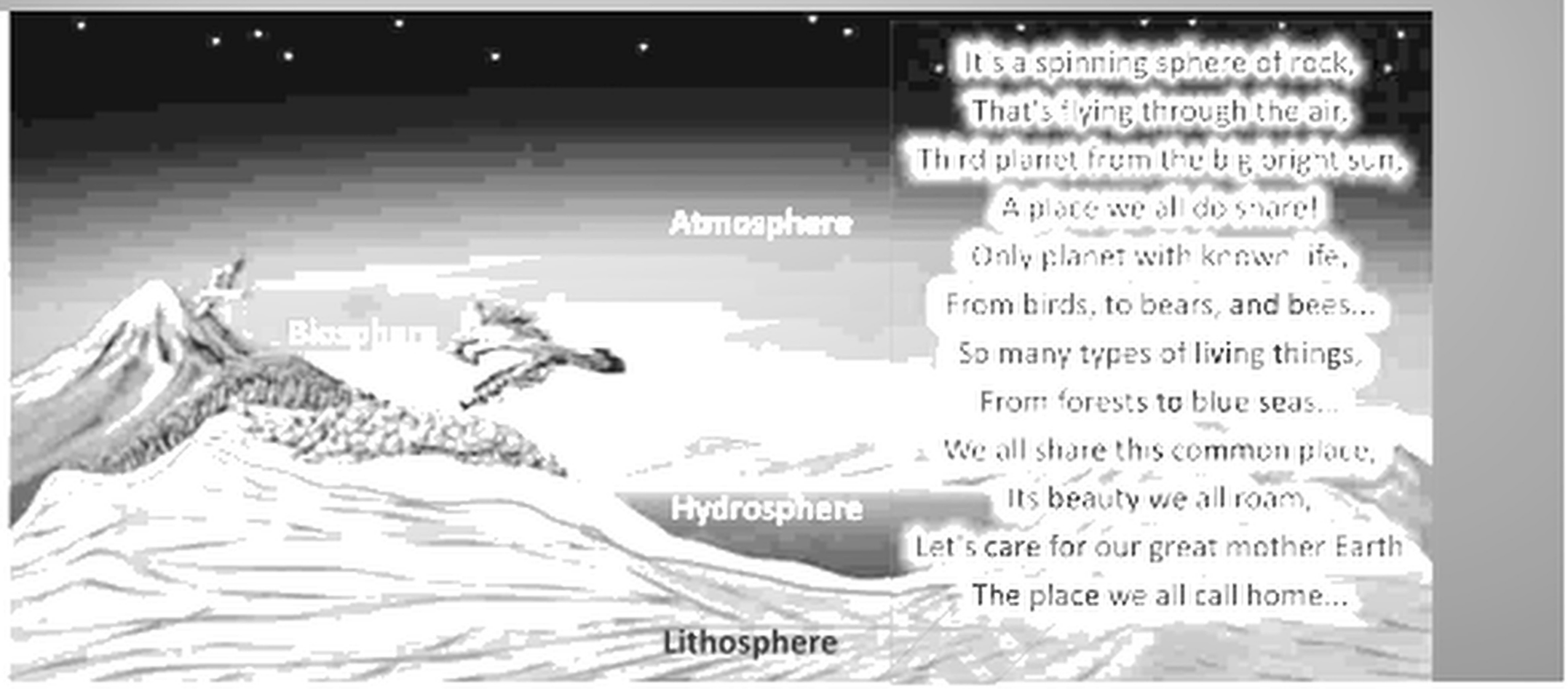
NATURAL SPHERES OF THE EARTH

Student's learning Outcomes

At the end of this chapter, the students will be able to:

- Define the natural spheres of the Earth.
- Explain the composition and structure of the Atmosphere.
- Understand the global wind system.
- Understand the types of moisture present in the Atmosphere e.g. rain, hail, snow fall, fog, clouds etc.

NATURAL SPHERES OF THE EARTH



2.1 Natural spheres of the earth

The earth is divided into four Natural Spheres:

a. Atmosphere(Air)

b. Lithosphere(Land)

c. Hydrosphere(Water)

d. Biosphere(Life)

a. ATMOSPHERE(AIR):

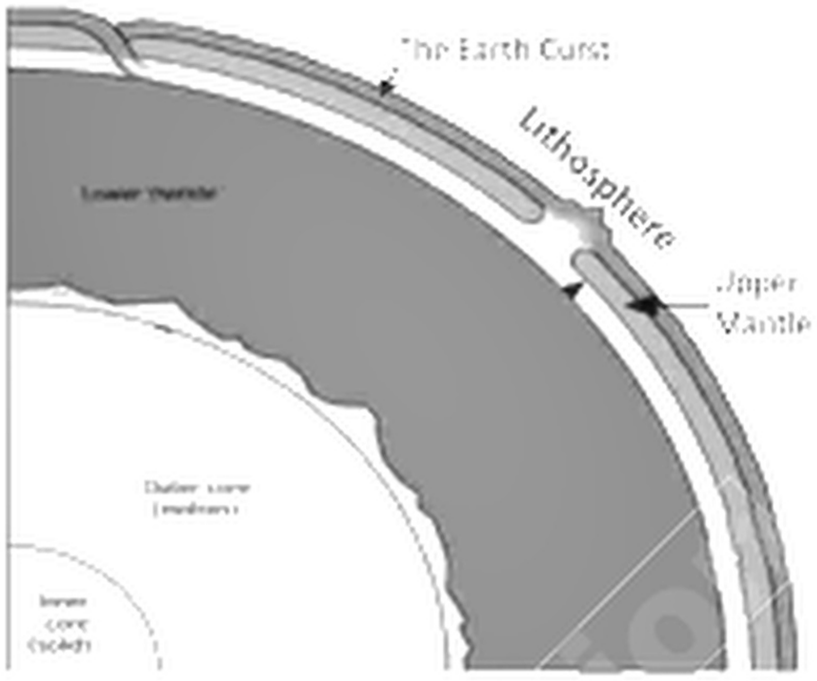
The layer of gases that surrounds the earth is called 'atmosphere'. It is a mixture of different gases that is known as air. The atmosphere protects the surface of Earth from the radiation of Sun and helps to maintain the temperature of the surface of Earth. The main gases of the atmosphere are Nitrogen, Oxygen, Carbon dioxide, water vapour etc.

Information Box

Nitrogen=78.%
Oxygen=21 %
Carbon dioxide=0.03%
Argon=0.93%
Other Gases=0.04%

b. Lithosphere (Land)

The earth crust and the portion of the upper most mantle directly below the crust forms the lithosphere. The upper surface of the lithosphere contains all the physical landforms that form the earth's scenery.



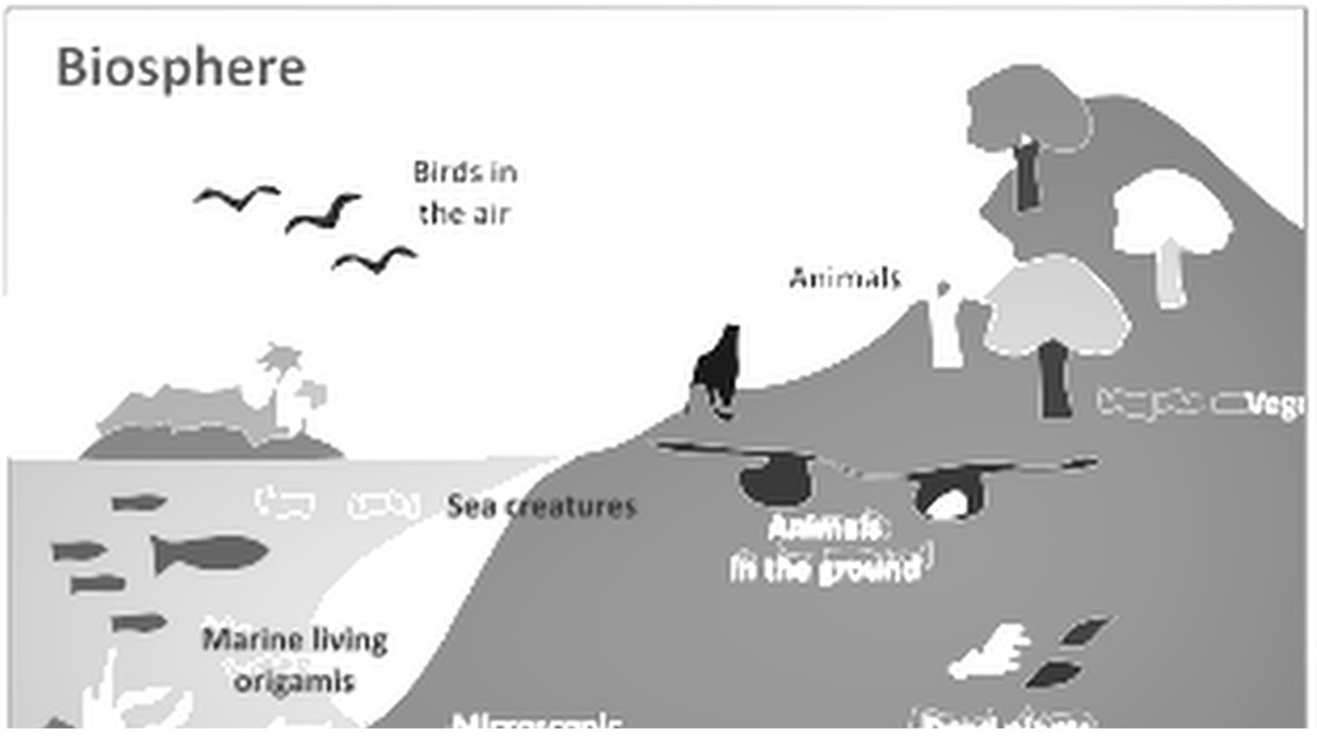
c. Hydrosphere (Water)

The hydrosphere is composed of all the water on the Earth. Nearly three-fourths (71%) of the Earth is covered with water (mostly ocean). Less than 3% of the hydrosphere is made up of freshwater. Most freshwater is frozen in ice sheets and glaciers in Antarctica, Greenland, and the Arctic. Freshwater can also be found underground, in chambers called aquifers, as well as rivers, lakes, and springs. Water is always in the atmosphere in the form of water vapours. Water vapour can condense into clouds and fall back to Earth as precipitation (rain fall, hail and snow).

Lake Superior in USA is the biggest fresh water lake in the world

d. Biosphere (Life)

The biosphere supports all forms of life (human, plants and animals) The biosphere extends from the deepest root systems of trees, to the dark environment of ocean trenches, to lush rain forests and high mountain tops.



2.2 Composition and Structure of the Atmosphere

Composition of the Atmosphere

There are three major components of the atmosphere.

a. Constant gases b. Variable gases c. Impurities

a. **Constant Gases**: Nitrogen, Oxygen and Argon are the three constant gases that make 99% of the air and are most necessary for human and other forms of life on earth.

b. **Variable Gases**: The three important variable gases are carbon dioxide, water vapours, and ozone. They are necessary for human well-being and make up the essential part of food for human, plants and animals.
Ozone has the ability to absorb ultra violet rays from the sun. The excess of ultra violet rays can be harmful for all forms of life. Carbon dioxide and water vapours have the ability to absorb heat energy both from the earth's surface and from the atmosphere.

c. **Impurities**: Impurities include volcanic dust, ash from fires, microscopic organisms, dust particles, pollen from plants and particles from meteoroids. It also includes tiny crystals of salts from the sea waves. These remain suspended in the atmosphere.

Structure of the Atmosphere

The Atmosphere of the earth is divided into four main layers:

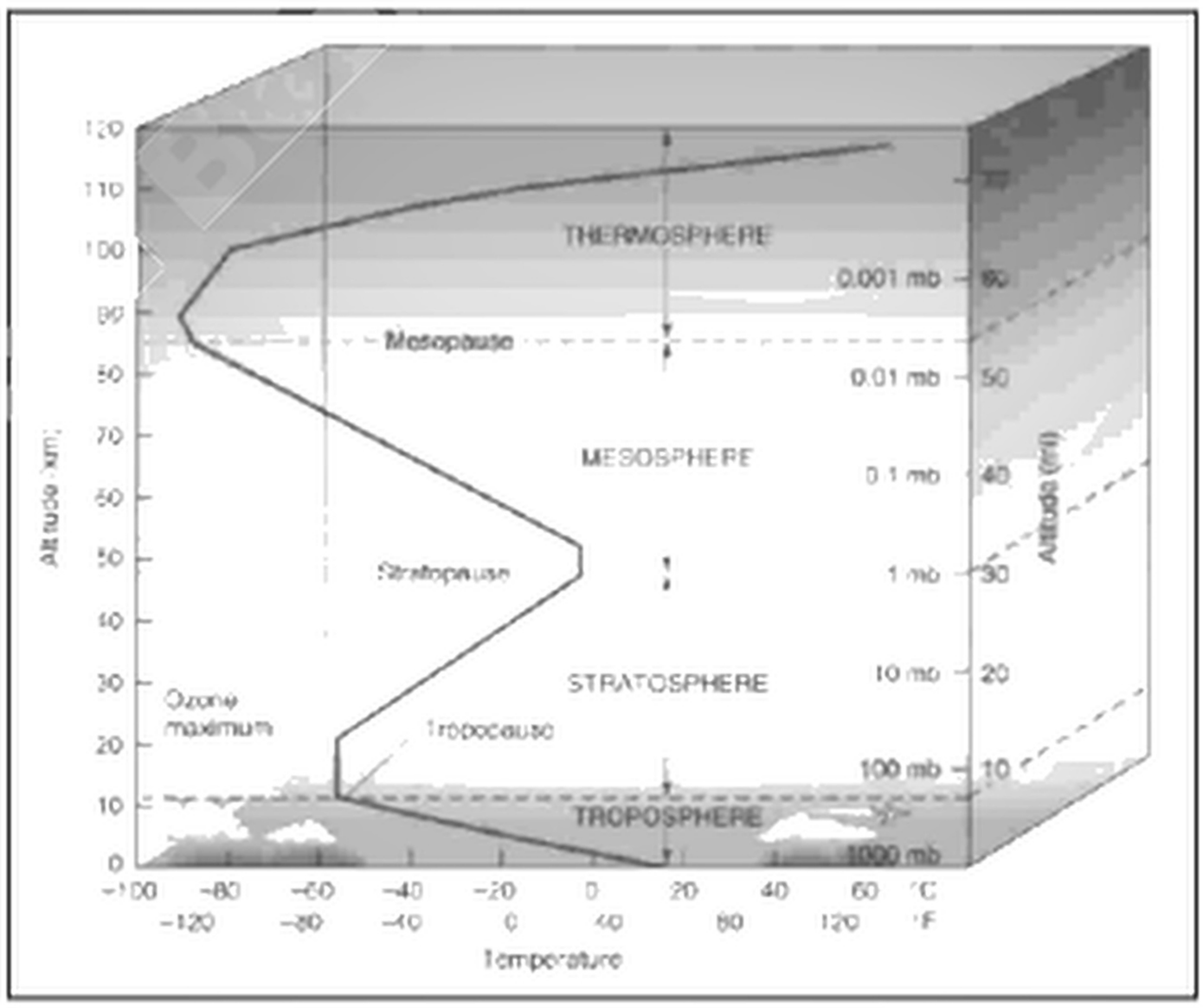
1) Troposphere

2) Stratosphere

3) Mesosphere

4) Thermosphere

The **Troposphere** is the lowest layer of the atmosphere in which temperature drops at a constant rate as the altitude increases. This is the part of the atmosphere where all weather conditions exist. The average height of the troposphere from the surface in to the space is



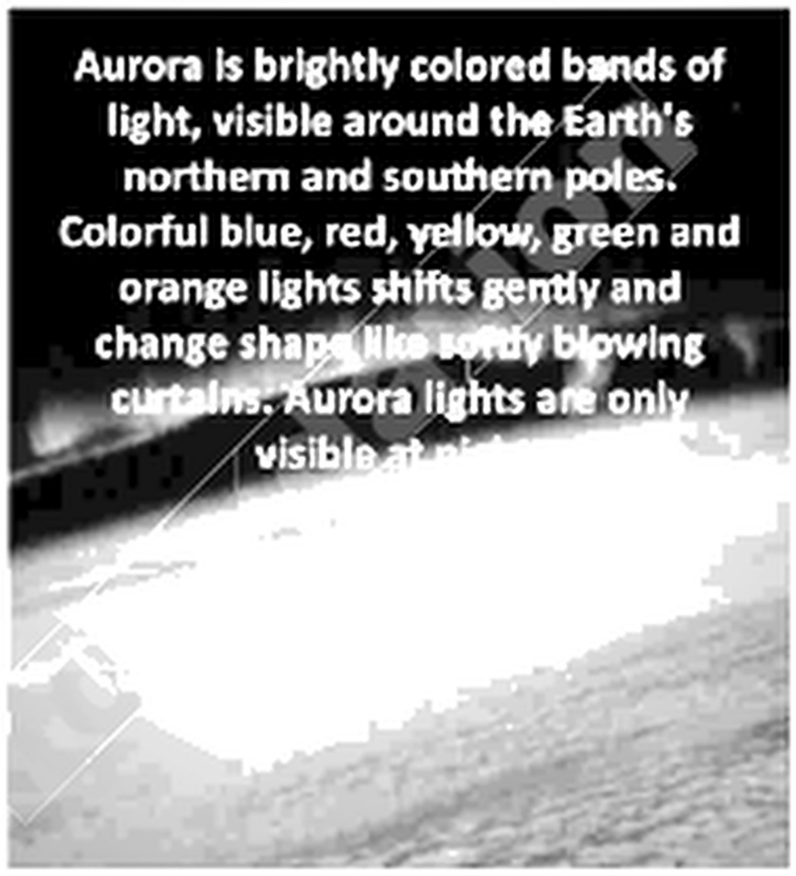
NATURAL SPHERES OF THE EARTH

The **Stratosphere** is the second layer of the atmosphere that lies above the troposphere. In this layer the temperature increases with height. This layer also contains the ozone layer that absorb ultra violet rays from the sun. The average height of stratosphere is 50 Kms.

Temperature falls at the rate of 6.5 degree centigrade per kilometre height from the surface of the earth.

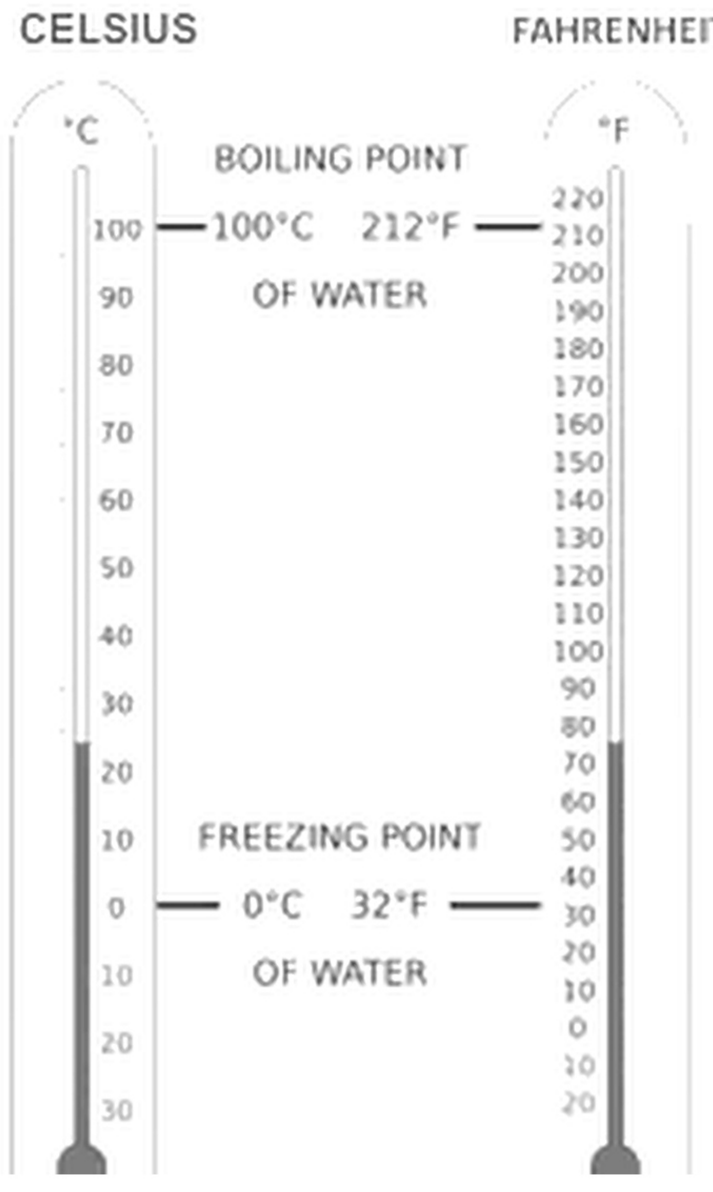
The **Mesosphere** lies above the stratosphere. The average height is about 85 Kms. This is the coldest layer of the atmosphere. The temperature decreases with height in this layer.

The **Thermosphere** is the upper most layer of the atmosphere. It has an average height of about 400 KMs. Here the temperature increases with height. The upper layer of the thermosphere is also called ionosphere. Here the phenomenon of the Aurora light occurs.



a. Temperature

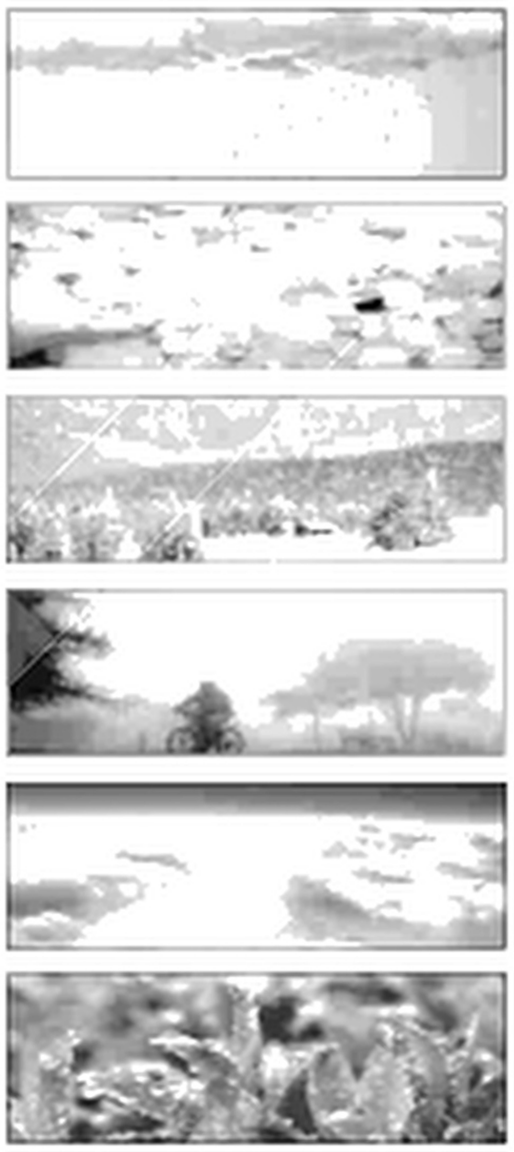
Temperature is an abstract term; it describes the energy created by heat or cold in air. Change of temperature takes place in gases, liquid and solids as they expand and contract with it. Temperature is measured by using scales like Fahrenheit degree (°F) and Celsius degree (°C). Temperature also changes with the distance away from the equator and also with altitude (height). Always remember the term temperature tells us how much heat is absorbed in the atmosphere by solar energy.



NATURAL SPHERES OF THE EARTH

b. Moisture

Moisture is always present in the atmosphere in the form of water vapours. Types of moisture present in the atmosphere are rain, hail, snow fall, fog, clouds etc.



- Rain: Release of droplets of water from the clouds is called rainfall.
- Hail: Lumps of ice fall to the earth. As more and more super cool water droplets gather around a hail, its size increases steadily.
- Snowfall: When condensation of water vapours takes place in the atmosphere at below freezing point, then snow falls either as feathering flakes or ice crystals.
- Fog: Condensation of dust and water vapours in the lower part of the atmosphere near the earth's surface is called fog or mist.
- Clouds: A cloud is a large collection of very tiny droplets of water or ice crystals. They are so small and light that they can float in the air.
- Dew: Water droplets condensed from the atmosphere on to cool surfaces near the ground.

Condensation

It is the process of change of water vapours into space to rain drops.

Do You Know what is Precipitation?

The release of moisture from the atmosphere is called Precipitation e. g. rain, hail and snowfall

c. Air Pressure

Air is a mixture of different gases and it has weight. Therefore, it exerts pressure on the earth. The instrument which is used to measure air pressure is called barometer. Pressure of air varies from time to time and place to place. It is mainly affected by temperature. If the temperature is high the pressure of air will be low and vice versa.

FACT

About 90% of water in the atmosphere is produced by evaporation from water bodies while the other 10% comes from transpiration from plants.

2.3 The Global Wind System

Wind is the movement of air, caused by the uneven heating of the Earth and its rotation. You cannot see it or hold it—but you can feel its force.

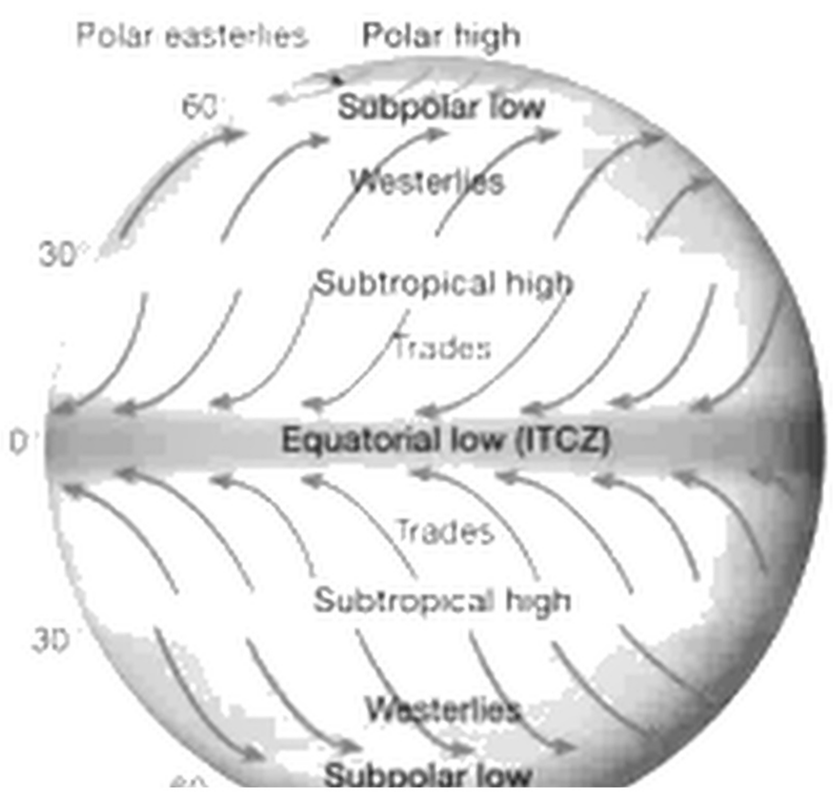
a. Planetary Winds / Global Winds

Global winds are also known as planetary winds or permanent winds. This is a system of winds that blows from high pressure areas to low pressure areas. The Coriolis Effect helps to determine the direction of planetary or global winds by causing them to deflect as the Earth rotates.

DO YOU KNOW ABOUT CORIOLIS EFFECT?

The Coriolis Effect is the deflection of air due to the earth's rotation. In the Northern Hemisphere air deflects to the right and in the Southern Hemisphere to the left

Types of Planetary Wind	**Characteristics**
Trade Winds	Winds that blow from Sub Tropical high pressure belts towards the Equator in the Northern Hemisphere and Southern Hemisphere.
Westerlies	Westerlies blow from subtropical high pressure belts to sub polar low pressure belts in the northern and southern hemisphere.
Polar Easterlies/winds	Cold, dry prevailing winds that blow from polar highs to sub polar low pressure belts from the east



b. Seasonal Winds (Monsoon winds)

During summers the land mass of Asia is intensely heated, whereas surrounding seas and oceans, (Arabian Sea, Bay of Bengal and Indian Ocean) have low temperatures or comparatively cooler temperatures. Due to the difference of air pressure winds start to blow from oceans to land. They are moisture-laden winds and bring rainfall to South Asia. These are known as Monsoon Winds or Seasonal Winds.

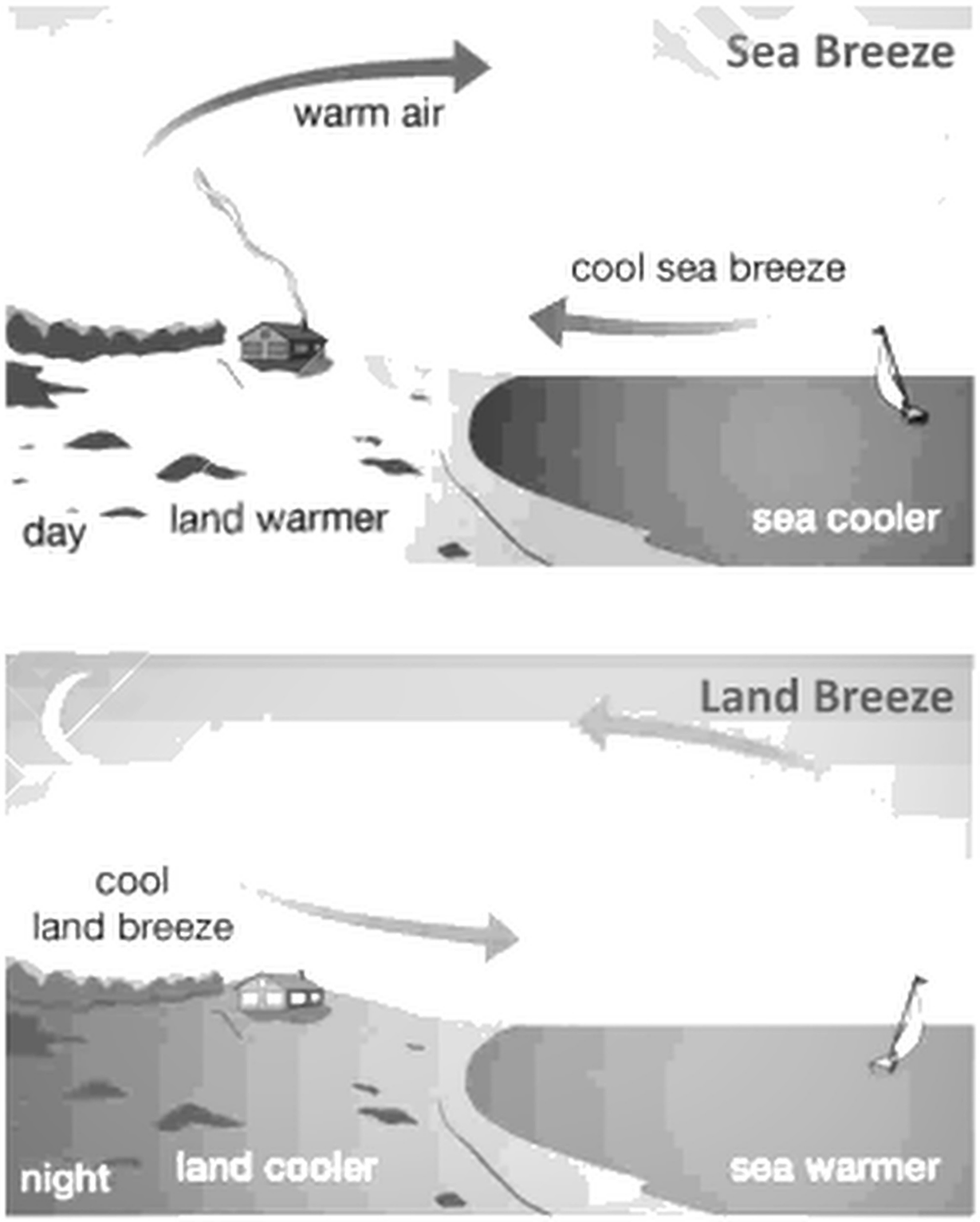
They change their direction in winter with the change of season and start to blow from land to sea. They are dry winds and do not give rain. Pakistan receives summer rainfall due to Monsoon winds.

c. Local winds (Land Breeze and Sea Breeze etc.)

Some winds are caused by the changes in air pressure and temperatures locally, they are called local winds; for example sea breezes, land breezes, mountain and valley breezes.

During day time the coastal areas become heated faster than the adjacent sea due to change in temperature and pressure. Winds start to blow from sea to land. These winds are called **sea breeze.**

At night, the process is reversed and winds blows from land to sea. These winds are called **land breeze.**



Exercises

Fill in the Blanks

1. .....is the upper most layer of the atmosphere.
2. Major constant gases are Nitrogen, Oxygen and .....
3. Ozone has the ability to absorb .....rays from the sun.
4. Temperature is usually measured in .....or degree Celsius.
5. 90% of water in the atmosphere is produced by ..... from water bodies.
6. .....is the liquid precipitation in the form of water drops that falls from clouds.
7. The Coriolis Effect is the .....of air due to the Earth's rotation.

Choose the Correct Option

1. Other than nitrogen and oxygen, composition of the rest of gases in the atmosphere is about:

   a. 4% b. 3% c. 2% d. 1%

2. Atmosphere is an important part of life on the:

   a. Earth b. Jupiter c. Neptune d. Mars

3. A Sea breeze blows from sea to land during the:

   a. Day time b. Night time c. Afternoon

4. Earth is surrounded by a layer of gasses called:

   a. Lithosphere b. Hydrosphere c. Atmosphere

5. Trade winds blows towards the:

   a. North pole b. South Pole c. Equator

6. Snowfall is a form of:

   a. Precipitation b. Pressure c. Temperature

7. The height of the Mesosphere from the surface of the earth:

NATURAL SPHERES OF THE EARTH

Give Brief Answers of the Following Questions

1. Define lithosphere?
2. If the Earth did not rotate at all, would there still be a Coriolis effect?
3. Write the names of natural spheres of the earth.
4. Write the names of three major atmospheric components.
5. Write the names of the areas where seasonal winds mostly occur.
6. What is the difference between land and sea breeze?

Give Detailed Answers of the Following Questions

1. Write the names of planetary winds and its characteristics.
2. Explain the structure of atmosphere in detail.

Video Links:
Air Pressure: https://www.youtube.com/watch?v=sDwfH7q0E94
Global Winds: https://www.youtube.com/watch?v=NQ3Tj-tdQIk

Share Experience Visit:
Official from Metrological department will be invited to visit school and inform students how they measure air pressure in their local areas.

TRY IT OUT

The Solid Layer of the Earth is

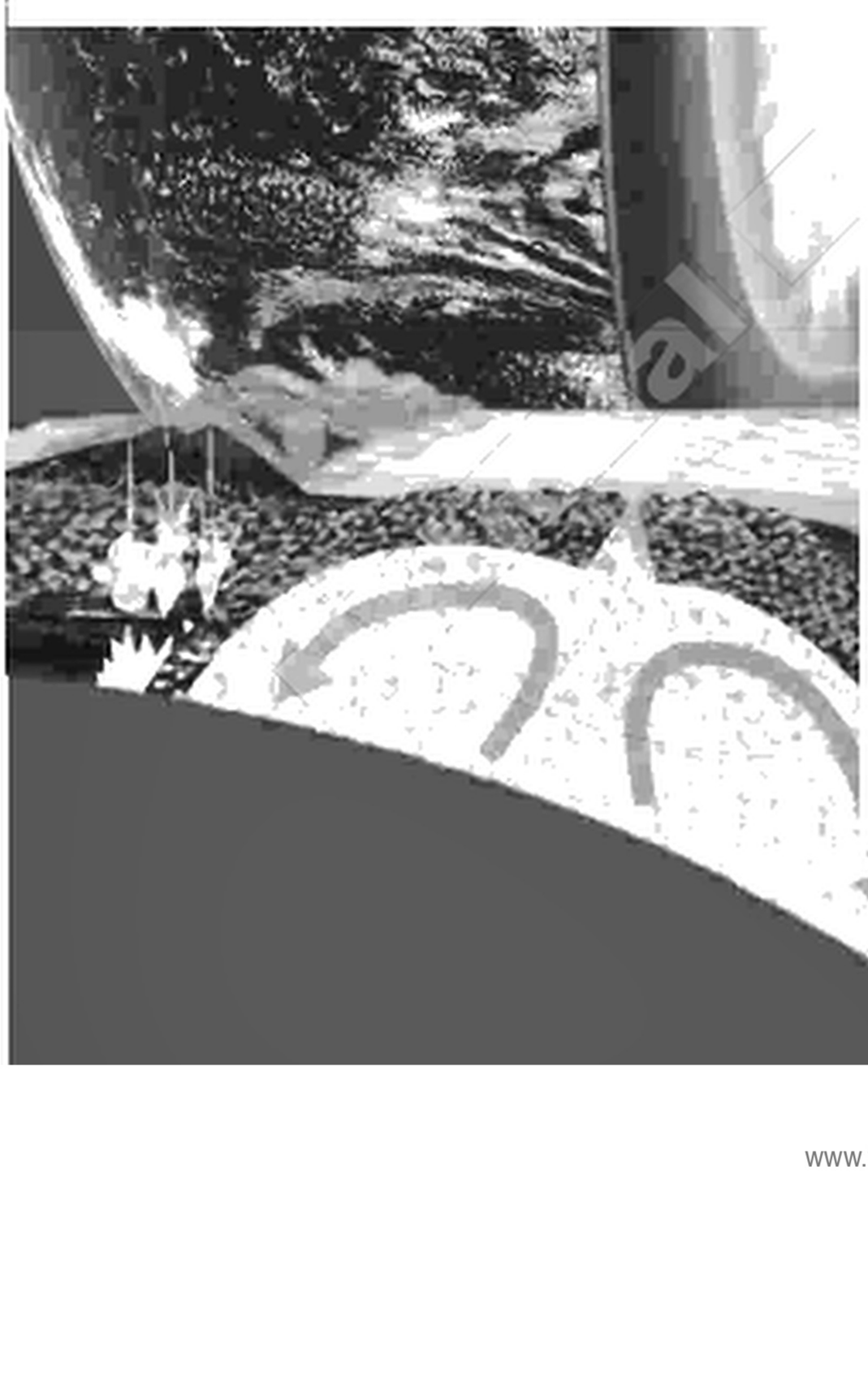
The layer of Earth's water is

The Living part of the Earth's Sphere is

Glossary

- Radiation: Emission of energy in form of waves through a medium
- Aquifer: A layer of rock, sand or earth that allows water to pass through it.
- Meteoroid: A rocky body orbiting the sun
- Microscopic organisms: An organism that can be seen only with the help of a microscope
- Deflection: Bending
- Counterclockwise: Anticlockwise
- Prevailing: Existing at a particular time; current

3



Student's learning Outcomes

At the end of this chapter, students will be able to:

- Recognize the layered structure of the Earth.
- Understand the concept of "Pangaea" and Continental drift theory.
- Define crustal plates.
- Identify the movement of crustal plates.
- Understand the concept of plate tectonics and locate two plates boundaries crossing over Pakistan.

Internal Structure of the Earth

In the last two chapters we read about what is surrounding the Earth and upper part of the Earth. In this chapter we shall know about how the Earth is formed from the inside.

3.1 Layered Structure of the Earth

The internal structure of the earth is divided into four different layers i.e.

1. Crust
2. Mantle
3. The Liquid Outer Core
4. The Solid Inner Core

1. Crust

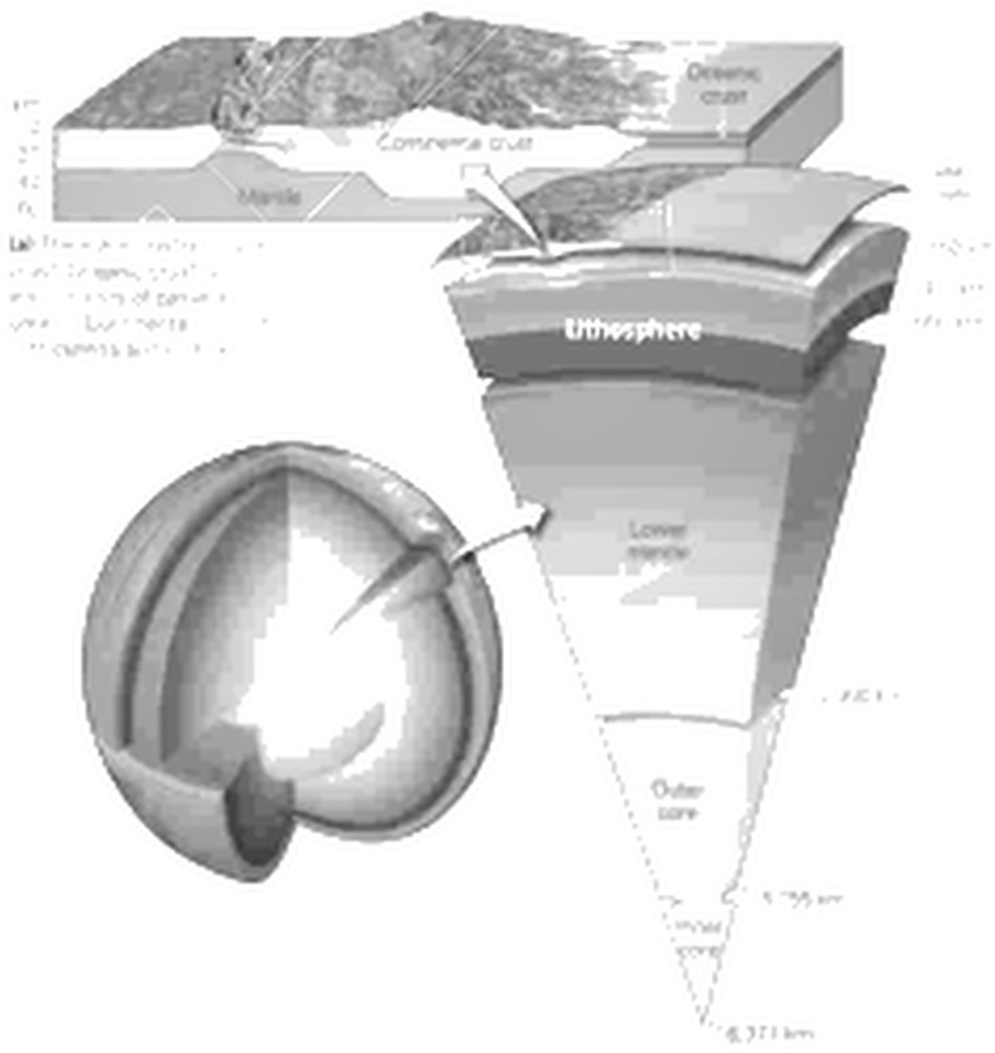
It is the lightest and most solid outer covering layer of the earth that lies just above the mantle. The thickness of the crust varies from the ocean to the continent i.e. 8 Km to 40km on the average, respectively.

2. Mantle

Below the crust, the second layer of the earth is the mantle. The thickness of the layer is about 2900 km. It is composed of very dense rocks.

The part of the mantle beneath the crust is solid but in some portions it contains molten rocks from where the lava erupts. The solid upper most mantle together with the crust is known as **lithosphere**. Below lithosphere lies the layer of mantle just like hot plastic that moves slowly and is known as the **asthenosphere**.

Layered Structure of the Earth



3. The Liquid Outer Core

The thickness of this layer is about 2250 km. This layer is composed of nickel and iron in a liquified form. It has the same composition as the solid inner core.

4. The Solid Inner Core

The solid inner core has a radius of 1220Km. It is composed of Iron and nickel in solid state. This is the heaviest layer of the earth.

3.2 Continental Drift Theory

About 250 million years ago, Earth did not have seven continents. It was one massive super continent called **Pangaea** (meaning all earth). This concept was given by a German earth scientist Alfred Wegener. The internal movements of the earth broke apart the super continent, forming present day continents and oceans. This theory is called the continental drift theory that was presented in 1915.

Wegener provided several evidences to support his theory, like:

- The remarkable jigsaw like fit of the continents.
- Fossils of same plants and animals found in areas that had been once connected.
- Similar rock formation.

The present day knowledge shows that the continents are still moving today.

Plate Tectonics theory is the modern form of continental drift theory. According to this theory the crust of the earth is divided into segments. These segments are called **plates** or **Lithospheric plates** generally known as **Tectonic plates**.

No

Work To Do!!!

Cut a piece of paper or card board into shapes of 7 continents as shown in this picture. Join the pieces as one does with jigsaw puzzle. You will be amazed to see how pieces fit into one another. The "Pangaea" is in your hands.

Internal Structure of the Earth

3.3 Crustal Plates (Continental and Oceanic Plates)

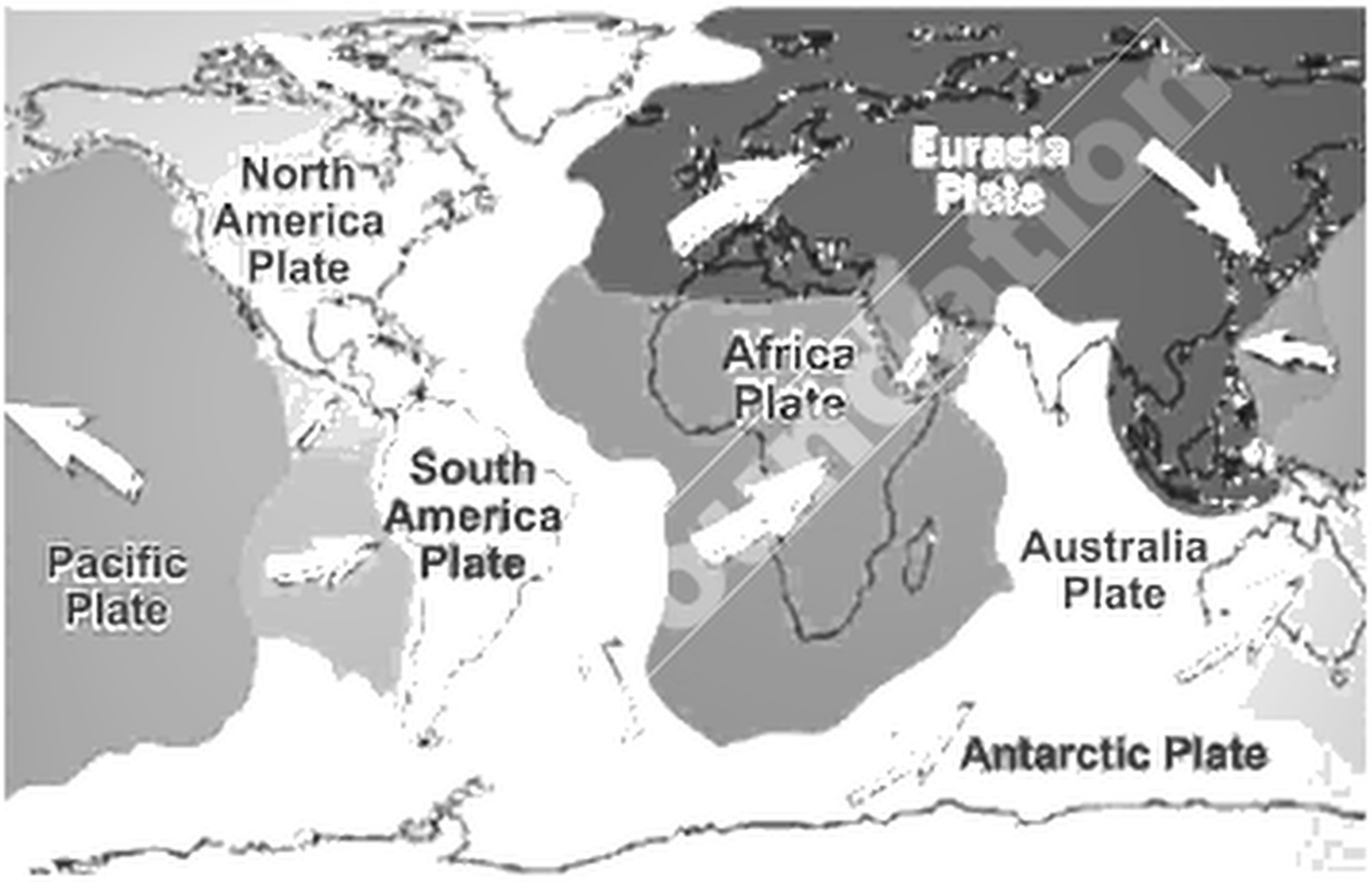
Geologists calculated that continents move about 5-10 cm per year on average.

Crustal plates are divided into continental plates and oceanic plates.

Continental Plates: Continental plates are the crustal plates of the continents. They are lighter and thick.

Oceanic Plates: Crustal plates under the ocean are known as oceanic plates. They are heavier and thinner than the continental plates.

There are seven major tectonic plates.



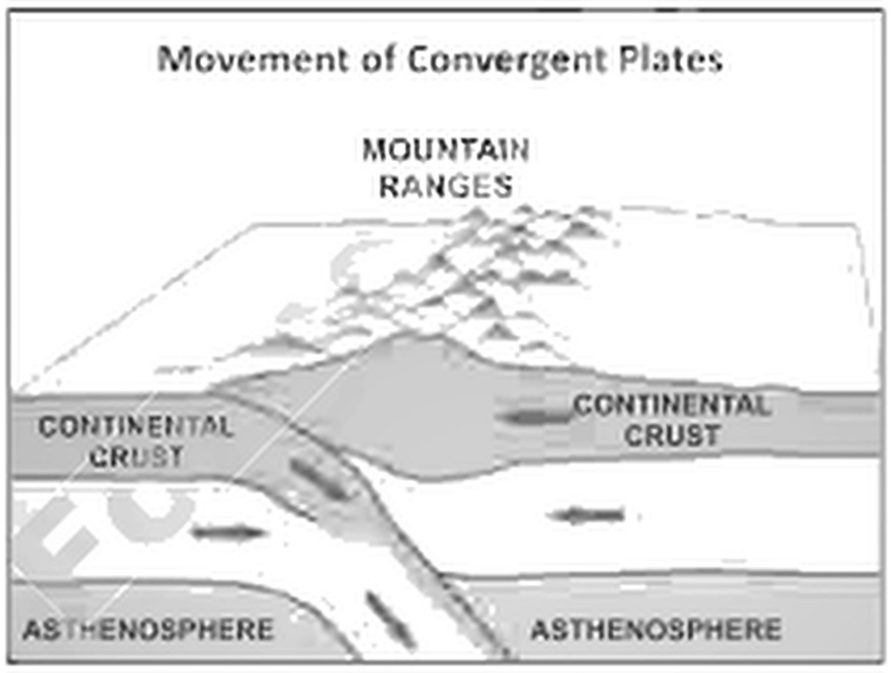
7 Major Tectonic Plates in the World		
Sr.#	**Name of Major Plates**	**Continents and Oceans**
1	Pacific Plate	Pacific Ocean
2	North American Plate	The landmass of North America and Atlantic Ocean
3	Eurasian Plate	The landmass of Europe and Asia
4	African Plate	The landmass of Africa and Atlantic Ocean
5	Antarctic Plate	The landmass of Antarctica
6	Indo-Australia Plate	The landmass of Indian Subcontinent, Australia and Indian Ocean
7	South American Plate	The landmass of South America and Atlantic Ocean

3.4 Movement of Crustal Plates (Plate Boundaries)

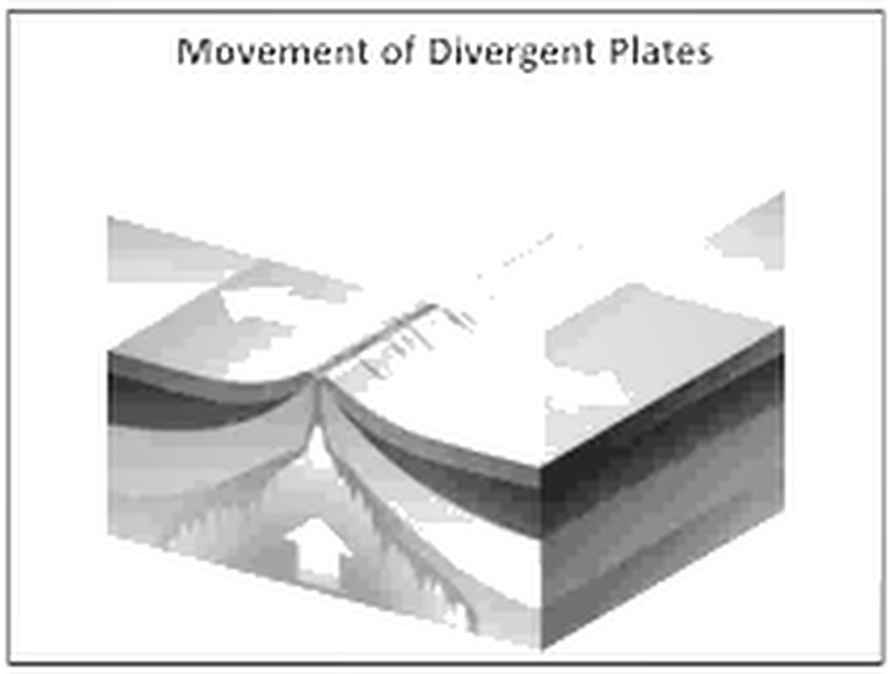
These plates move relative to each other maintaining their direction of movement for millions of years. Tectonic plates can collide, separate, or slide past each other. Each tectonic plate boundary interacts with each other in three ways:

1. **Convergent Boundary**, when plates move towards each other (destructive plate boundary).
2. **Divergent Boundary**, When two plates move away from each other (Constructive plate boundary)
3. **Transform Boundary**, When two plates slide past each other.

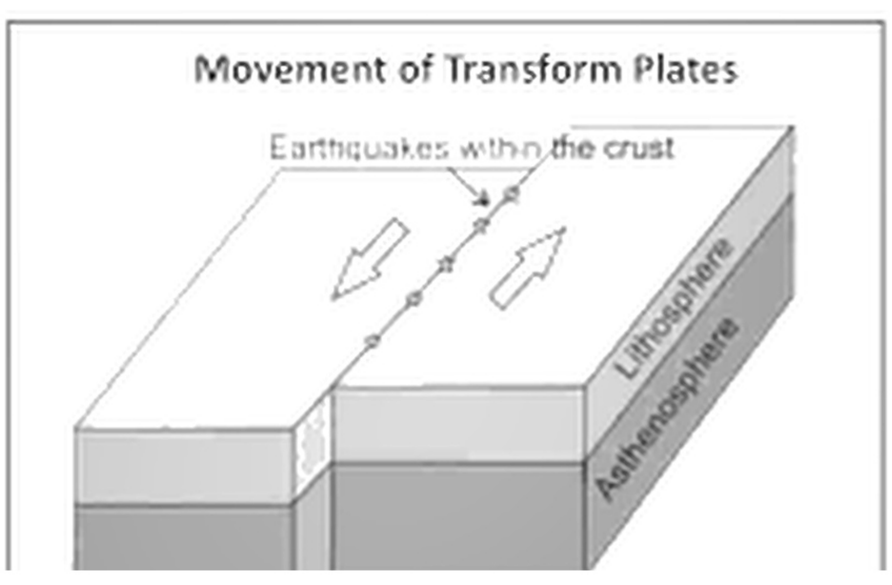
1. **Convergent Boundary**: When two tectonic plates collide, the boundary is called convergent boundary, for example Indo Australian Plate collides with Eurasian Plate, as a result high mountains are formed and earthquakes occur. When oceanic plates meet continental plate the lighter continental plate over-ride the heavier oceanic plate and push it downwards. This process is known as **subduction**.



2. **Divergent Boundary**: When two tectonic plates move away from each other the boundary is called divergent boundary. As they move apart magma rises to fill the gap. The rising magma cools and forms new sea floor. This is called **seafloor spreading**.

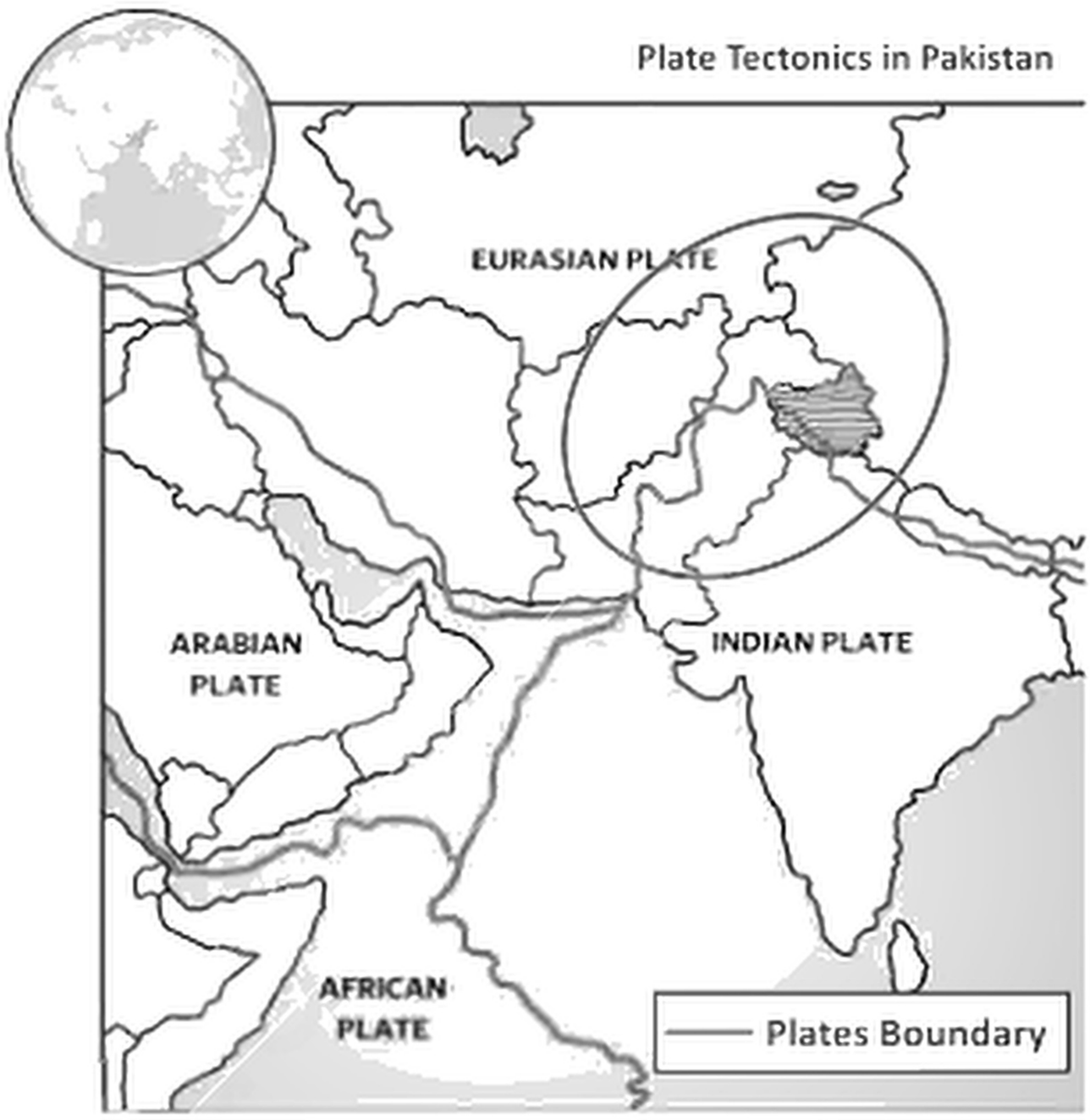


3. **Transform Boundary**: When two tectonic plates slide past each other horizontally, the boundary is called a transform boundary as the tectonic plates have irregular edges, they grind and jerk as they slide past each other and produces earthquakes.



3.5 Plate Tectonics in Pakistan (Indo-Australian and Eurasia Plates)

Plates Tectonics in Pakistan: Geologically, Pakistan lies at the boundary of two tectonic plates; Indo Australian and the Eurasian plates. The boundary between the plates cuts across the Pakistan in a north-east and south-west direction. The Indo-Australian Plate collides and crushes into the Eurasia Plates. Sindh, Punjab and Kashmir lie on the north-western corner of the Indian plate whereas Baluchistan and most of the Khyber Pakhtunkhwa lie on the margin of the Eurasian plate. The Northern areas and Azad Kashmir lie along the edge of the Indian plate and hence are prone to violent earthquakes where two tectonic plates collide.



Indo-Australian and Eurasia Plates are continuously moving towards each other. This is the reason; earthquakes continue to occur in Pakistan and the neighbouring countries.

Do You Know!!!

2005 Kashmir earthquake occurred at the northern tip of the Indian Plate.

Exercises

Fill in the Blanks

1. The internal structure of the earth is divided into .....layers.
2. The thickness of the crust from the ocean to the continents is 8km to.....km.
3. The solid inner core is composed of iron and.....
4. There are..... major tectonic plates in the world.
5. When two tectonic plates move away from each other is called.....boundary.
6. About 250 million years ago all land masses were united to form super continent called .....

Choose the Correct Option

1. The solid upper most mantle together with crust is known as:

   a. Asthenosphere b. Lithosphere c. Tectonic Plates

2. The thickness of the liquid outer core is:

   a. 3500 km b. 2900 km c. 2250 km

3. Continental drift theory was presented in the year:

   a. 1912 b. 1915 c. 1900

4. When two tectonic plates slide past each other horizontally, the boundary is called:

   a. Transform b. Divergent c. Convergent

5. The Northern areas and Azad Kashmir of Pakistan lie along the edge of the:

   a. Indian Plate b. Pacific Plates c. African Plates

Internal Structure of the Earth

Give Brief Answers of the Following Questions

1. Draw and label the internal structure of the Earth?
2. What is the difference between Oceanic plates and Continental plates?
3. Write down the name of three ways that Tectonic plate boundaries interact with each other?
4. What is meant by Tectonic plates?
5. Pakistan is situated on the boundary of two Tectonic plates. Name them?

Give Detailed Answers of the Following Questions

1. Write down the internal structure of the Earth?
2. Write down the Continental drift theory with supporting evidences?

Glossary

- Molten: Melted, liquid
- Fossil: Remains or traces of plants and animals that lived long ago
- Collide: Hit by accident when moving
- Divergent: different
- Drift: Move away, separate
- Jerk: A quick, sharp, sudden movement

4

ROCKS

Student's learning Outcomes

At the end of this chapter, students will be able to:

- Understand the Rocks, Minerals and Elements.
- Comprehend the main types of rocks and their formation.
- Enumerate the uses of rocks.
- Understand the concept of rock cycle.
- Identify different kinds of rocks found in Pakistan.
- Explain the importance of precious and semi-precious stones in northern mountains of Pakistan and their uses.

ROCKS

Have you ever thought about rocks? How old they are? How they are formed? Why they are different in shape, texture and colour? This chapter will introduce you to the fascinating world of rocks

4.1 Rocks, Minerals and Elements

A **rock** is any mass of **natural deposit** which forms the solid part of the earth's crust. Rocks can be made up of thousands of minerals, a few or even just one. A rock can be differentiated by its minerals, hardness, colour, grain size and texture.

The basic parts of all rocks are minerals. **Minerals** are the solid inorganic, naturally formed substances that have crystalline structures with specific chemical compositions. Minerals are made up of elements. **Elements** are the substances that have the same number of atoms and cannot be changed.

There are 117 known elements; eight common elements are oxygen, silicon, aluminium, iron, calcium, potassium, magnesium and sodium.

4.2 Types of Rocks and their Formation

Rocks are classified into three major groups according to their mode of formation and appearances:

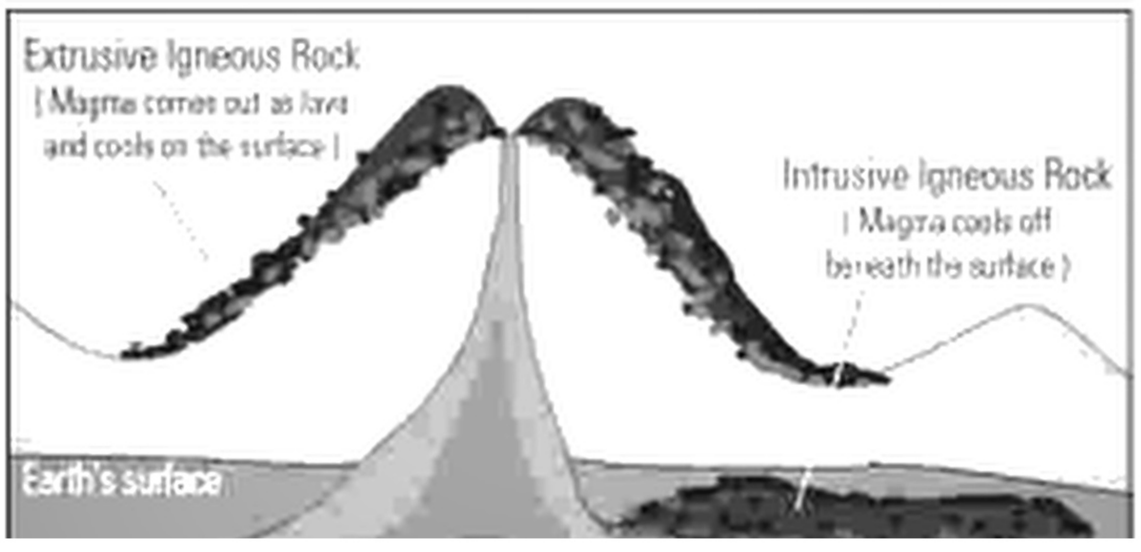
1. Igneous Rocks
2. Sedimentary rocks
3. Metamorphic rocks

DO YOU KNOW!!!

Minerals are made up of elements and rocks are made up of minerals.

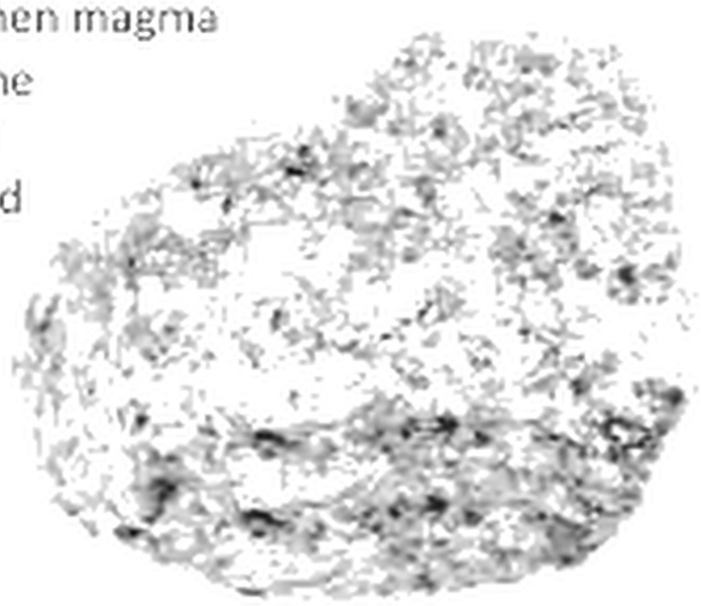
a. Igneous Rocks

Igneous means 'fiery' (from heat or fire). Igneous rocks are formed by the cooling and solidification of molten rocks from beneath the Earth's crust. Normally, they are in crystalline structure.

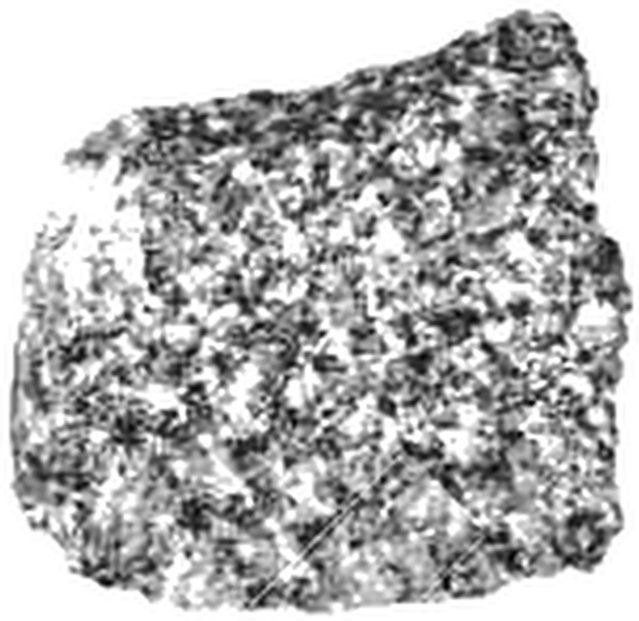


ROCKS

Intrusive Igneous Rocks: When magma **solidifies** and **cools** within the Earth's crust. The process of cooling of magma is slow and causes large mineral crystals. Many intrusive rocks are crystalline in nature and are coarse-grained for example granite and gabbro.

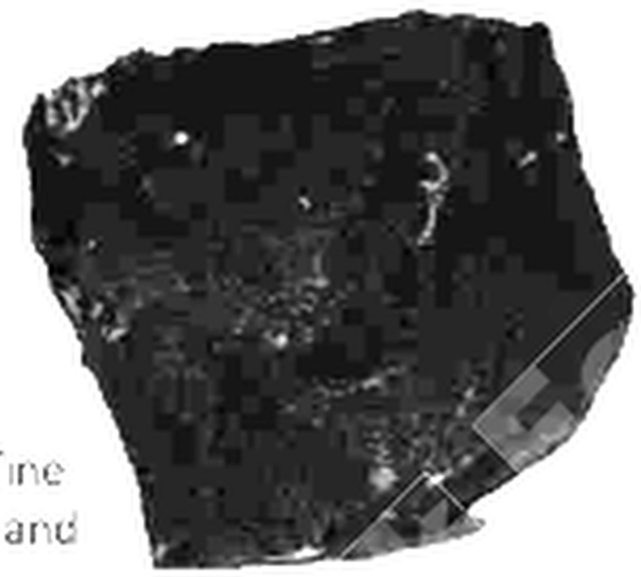


Granite

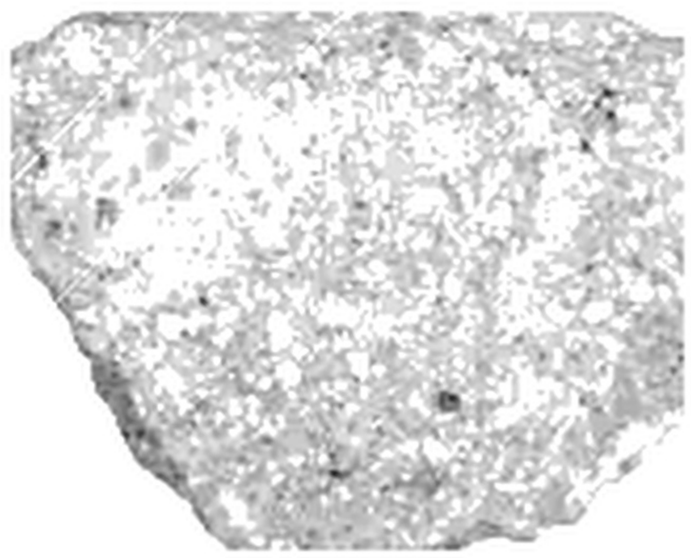


Gabbro

Extrusive Igneous Rocks: When lava cools and solidifies on the Earth's surface. The process of cooling of magma is quite rapid and forms very small mineral crystals. Many extrusive igneous rocks are fine –grained for example basalt and rhyolite.



Basalt



Rhyolit

Generally, these rocks are used in sculpturing and construction. They are rich in minerals.

Magma: It is molten state of matter, with high temperature, usually of silicate mineral composition with dissolved gases.

Lava: When molten magma emerges on the Earth's solid surface, it is called lava.

b. Sedimentary Rocks

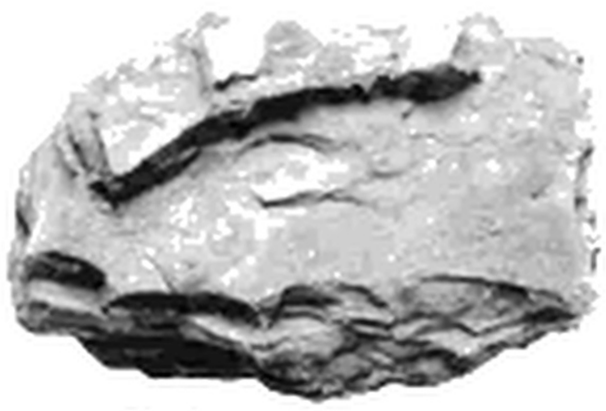
They are distinguished from other rock types by their characteristic layer (strata) formation. That is why they are also called stratified rocks. The material that forms sedimentary rocks are brought by streams, glaciers or even animals. They often contain fossils of animals, plants and other organisms. Sedimentary Rocks are divided into three main types:

1. Mechanically formed rocks
2. Chemically formed rocks

ROCKS

1. **Mechanically formed rocks**: The weathered material on the surface of the earth is transported by wind, water and ice deposited at the bottom of seabed as sediments. The size of the sediments differs from fine grains to rounded particles. This process takes millions of years. With time the sediments become compacted by continuous deposition of layers on top. This process of sedimentation is called **mechanically formed sedimentary rocks**. When the seabed is uplifted in some areas the example of these rocks can be seen in shale, sandstones and conglomerate. Usually it is used in construction work.

Conglomerate

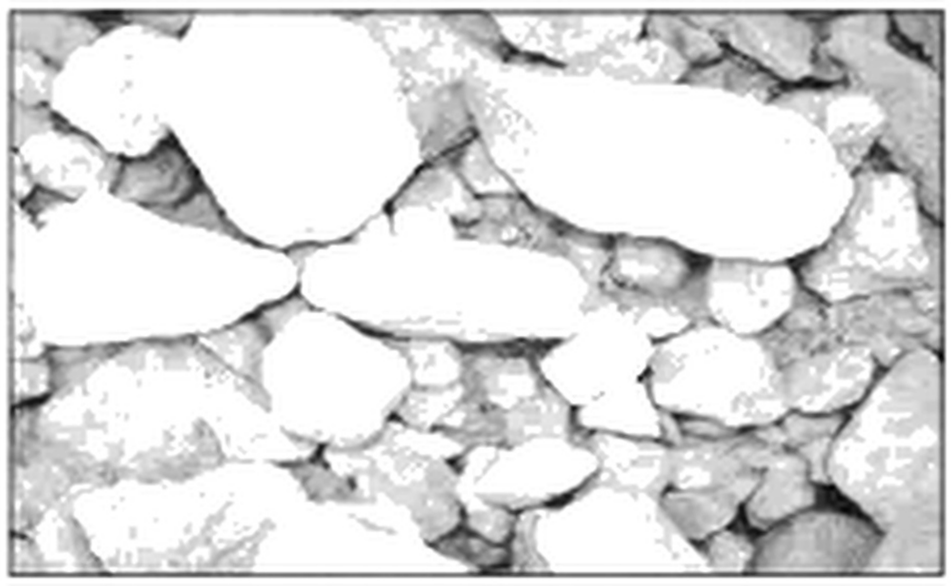


Shale

Sandstone

2. **Chemically formed rocks**: This process begins when a chemical reaction occurs between rock minerals and water. This process usually occurs in lakes and seas. When water evaporates from the water bodies, minerals within the water start to precipitate as crystals and settle to the bottom of the sea or lake. Gypsum and limestone are examples of **chemically formed rocks**. They are used in cement making, manufacturing of wallboard and plaster of Paris.

Gypsum

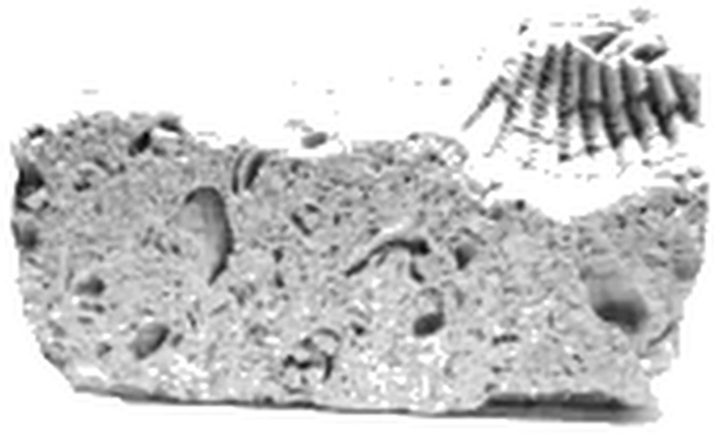


Limestone

3. **Organically formed rocks**: These rocks form when remains of living organisms such as corals or shellfish, skeletal parts of animals settle on the sea bed and get compressed. For example, limestone is made from the skeletons of creatures called coral. Coral are tiny creatures that make hard skeletons out of calcium carbonate.

   Rocks that are organically formed with vegetative matter, are called **carbonaceous rocks**. They are often found in swamps and forests Coal and lignite are carbonaceous rocks. Coal

ROCKS



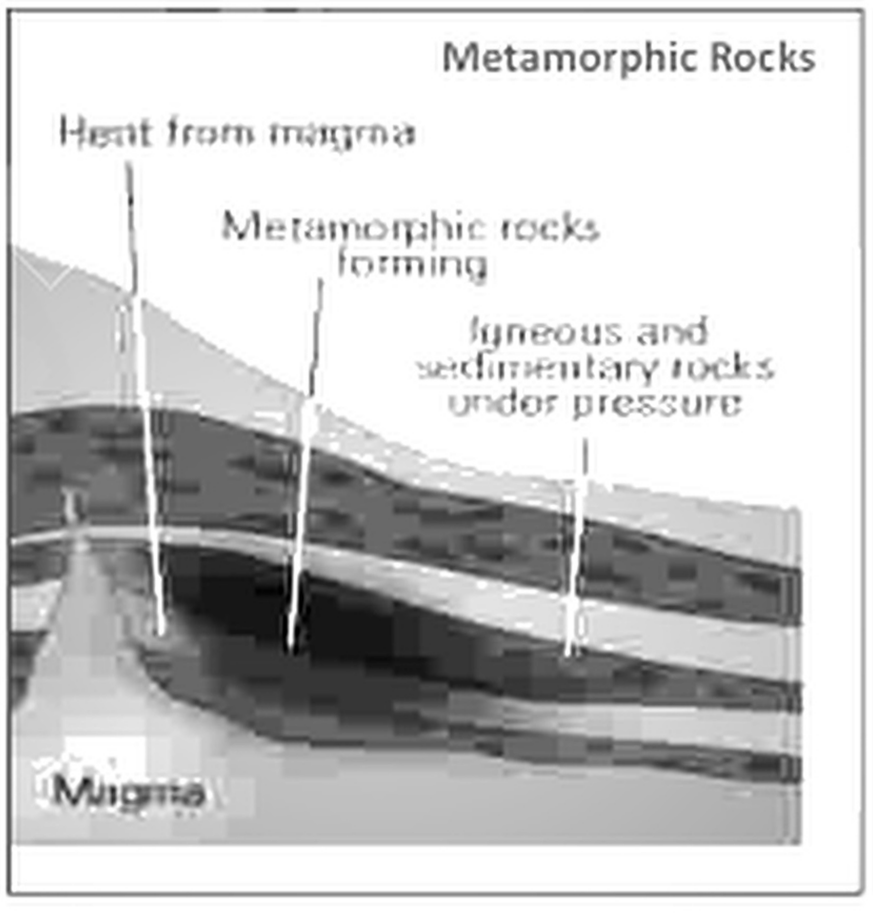
Limestone is made from the skeletons of creatures

Information Box

Coal forms from plant material that has been buried deep underground. Over millions of years, the buried plant material turns into coal. It is used as a fuel.

c. Metamorphic Rocks

The word 'Metamorphic' originates from the Greek word 'Meta' which means 'change' and 'morphs' which means 'form'.

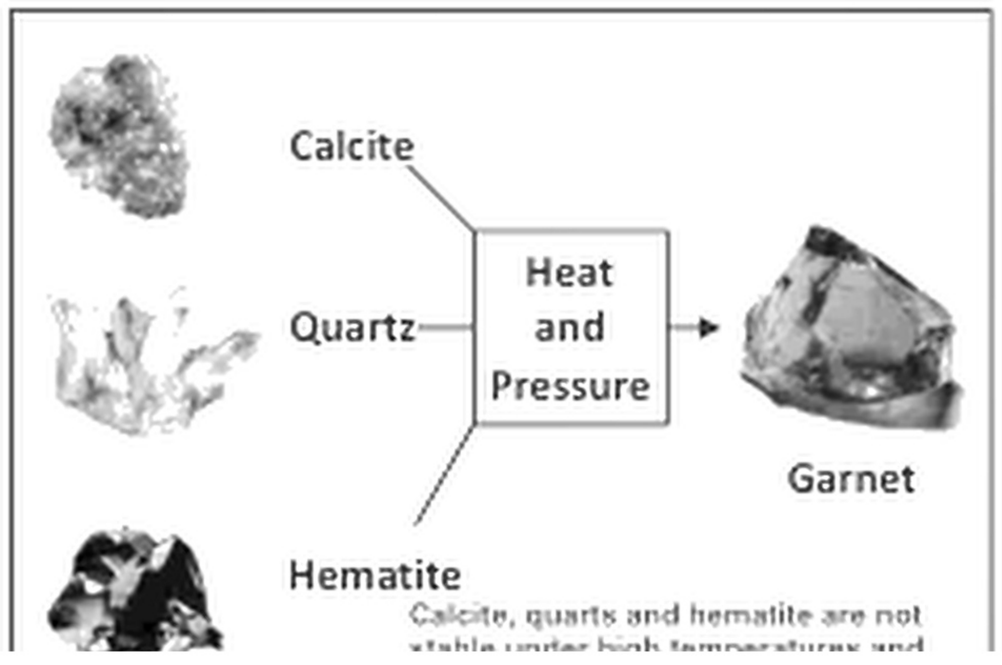


All rocks whether igneous or sedimentary may become metamorphic or changed rocks under intense pressure and high heat. Due to high pressure and intense heat, rocks change their physical structure and chemical composition. This change is called metamorphism. Most metamorphism happens at temperatures between 150°C and 1,000°C or even higher temperatures. For example, clay may be changed into **slate**, limestone into **marble**, sandstone into **quartzite**, granite into **gneiss**, shale into **schist** and coal into **graphite**.

4.4 Rock Cycle:

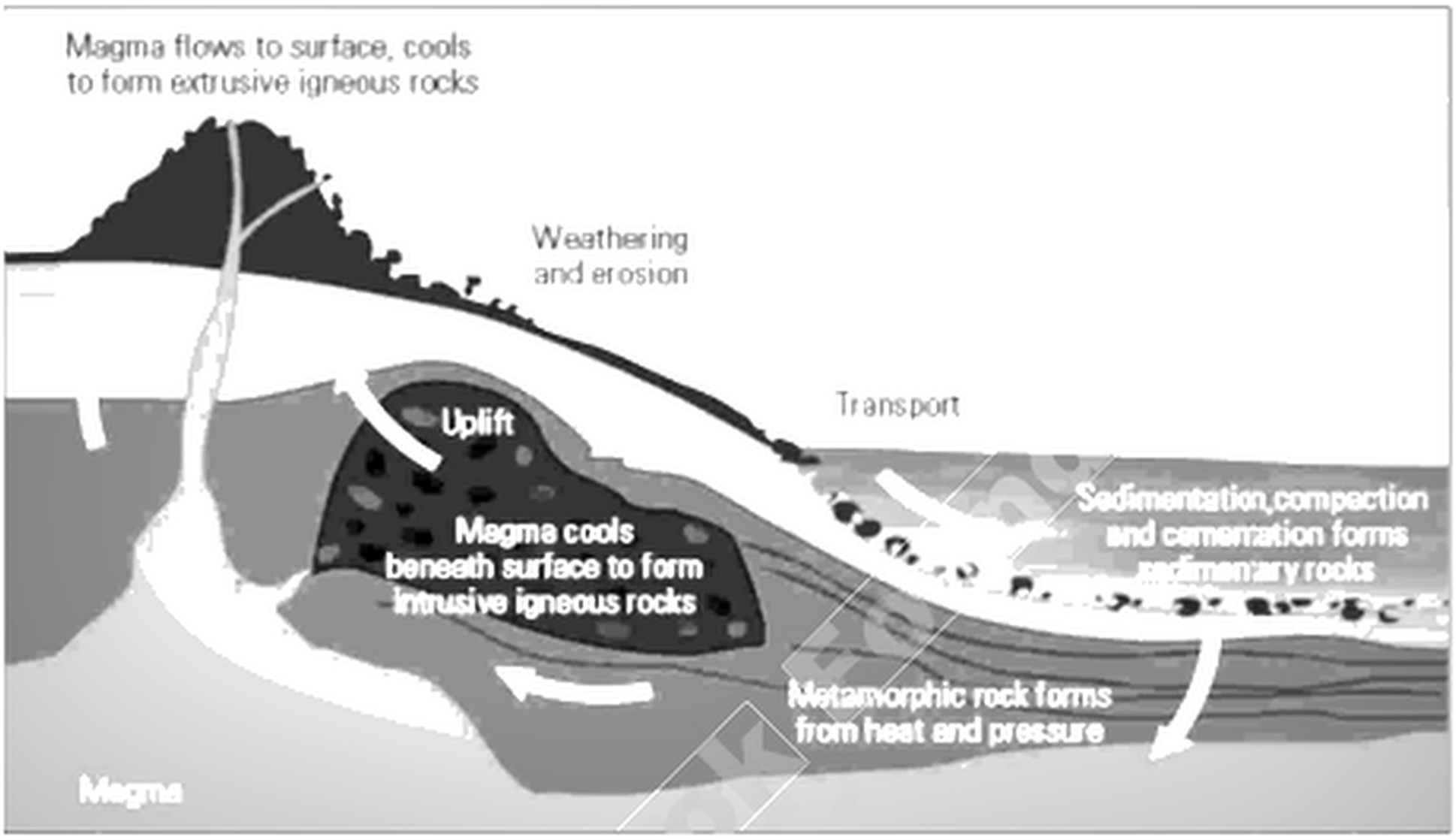
Firstly, the molten magma from the mantle comes up to the surface of earth through volcanic activity, when it cools it forms igneous rocks.

Secondly, these rocks weather away by the action of wind, air and water and they break down, form sediments and are transported into seas and oceans. The sediments can be seen in the form of sedimentary rocks wherever the seabed is uplifted.



ROCKS

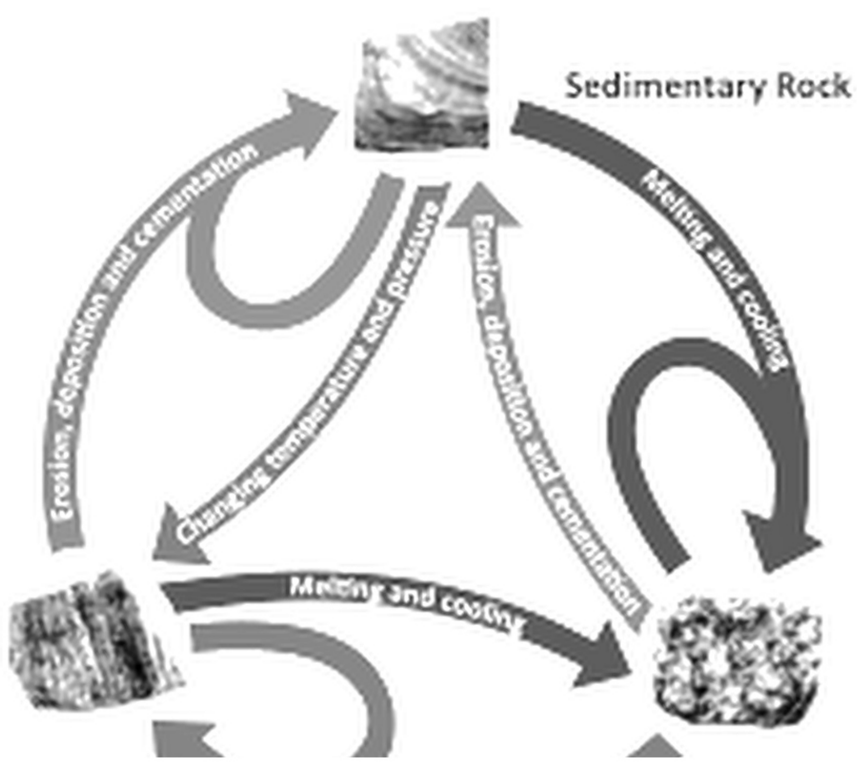
change into metamorphic rocks. When part of the Earth's crust containing different kinds of rocks is subducted into the mantle, these rocks melt into the mantle to form magma again and the rock cycle is completed.



If you look at the Earth's Crust!!!

80% are Igneous Rocks, 15% are Metamorphic Rocks and 5% are Sedimentary Rocks.
But 75% of land surface contains sedimentary rocks.

The Rock Cycle



4.5 Rocks in Pakistan

A great variety of rocks are found in Pakistan. In the Himalayan region, the common rock type is **metamorphic rock** which are gneiss, schist and slate. Marble is also a metamorphic rock found in Chagai (Baluchistan) and Mulagori (KPK).

Granite, diorite, gabbro, dolomite are common types of **igneous rocks** which are found in Dir, Swat, Chitral, Gilgit, Zhob, Chagai and Lasbella.

Limestone is a **sedimentary rock**, found in Kot DJ, Mango Pir (Sindh). Gypsum is found in Daud Khel (Punjab). Coal is another sedimentary rock found in Harnai, Sor Range, Degari, Mach in Balochistan and Meting Jhumhpir in Sindh province.

4.6 Precious and semi-precious stones in Northern Mountains of Pakistan

Nature has blessed Pakistan with a great number of precious stones. Some of the precious stones found in Pakistan are prominent in the mineral world.

The northern and north western parts of Pakistan are covered with three world-famous ranges Hindukush, Himalayas, and Karakorum. These mountain ranges are extremely rich in minerals deposits. Deep green Emerald of Swat valley and rare pink Topaz of Mardan are one of the most precious stones in the world market. Ruby, a transparent deep red stone is found in Hunza. Precious stones are commonly used in jewelry.

Pink Topaz of Mardan

Deep Green Emerald of Swat Valley

Deep Red Ruby of Hunza

DO YOU KNOW!!!

Metallic Minerals: Chromite, Manganese, Iron, Copper/Gold and Zinc –Lead

Non-Metallic Minerals: Marble, granite, dolomite, rock salt, china clay, fuller's earth, gypsum, soapstone etc.

Exercises

Fill in the Blanks

1. A rock is any mass of ..... which forms the solid part of the earth's crust.
2. A mineral is a solid, ..., naturally formed substance that has a crystalline structure.
4. All rocks whether igneous or sedimentary may become ..... rocks.
5. Limestone and chalk are .....rocks.
6. Precious stones are commonly used in .....
7. Sedimentary rocks are also called ..... rocks.
8. Rocks that are organically formed with vegetative matter in swamps and forests, are called..... rocks.

Choose the Correct Option

1. Chemical reactions in rocks usually occur in between:
   a. lakes and seas b. surface of the earth c. rock minerals and water
2. Hindukush, Himalaya, and Karakorum mountains are extremely rich in:
   a. minerals deposits b. fossil fuels c. coal
3. According to the formation, sedimentary rocks are divided into:
   a. Four types b. Three types c. Two types

4. Many extrusive igneous rocks are:

   a. finegrained b. coarse grained c. sediments

5. When magma cools slowly it causes:

   a. Large mineral crystals b. small mineral crystal c. mineral crystal

6. The common rock type in the Himalayan region is:

   a. Sedimentary rocks b. Metamorphic rocks c. Igneous rocks

7. Structure wise Igneous rocks are:

   a. Crystalline shape b. coarse grained shape c. In layers shape

Give Brief Answers to the Following Questions

1. What are elements, rocks and minerals?
2. Write any five examples of sedimentary rocks?
3. What is the difference between intrusive and extrusive igneous rocks?
4. Write down the names of precious stones found in Pakistan.

Give Detailed Answers to the Following Questions

1. Write down the main types of rocks according to their formation and explain sedimentary rocks briefly?
2. How is the rock cycle completed, explain with the help of a diagram?

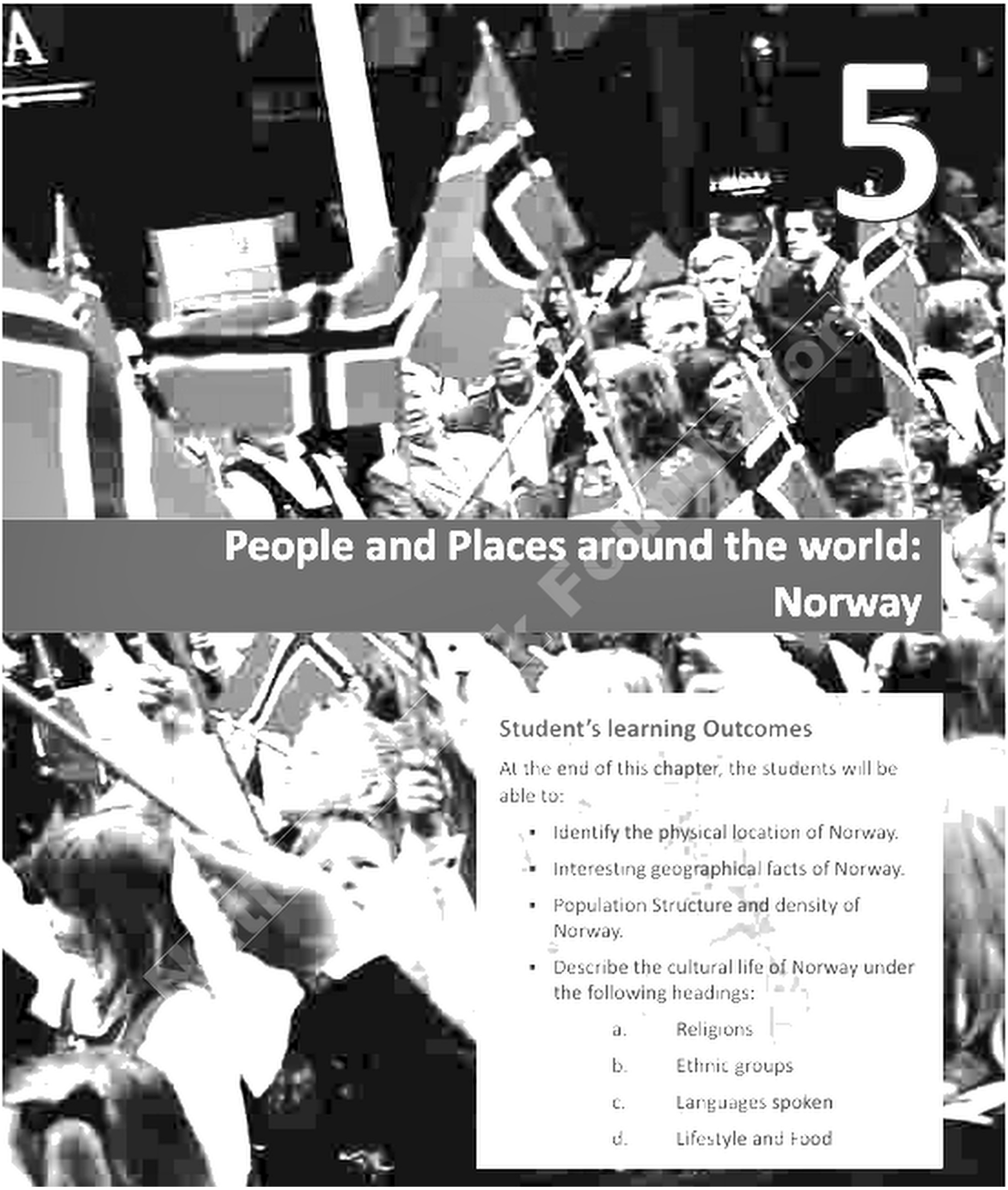
ROCKS

Activity

Draw a Flow chart of Rocks and their types

Glossary

- Crystalline: Resembling a crystal, solid form
- Sculpturing: The art of making models by carving and shaping techniques
- Weathered: Breaking down of rocks, soil or minerals due to long exposure to sun, wind and water
- Strata: A layer of rock, soil, or similar material
- Precipitate: Deposition of insoluble solid from a liquid solution



5

People and Places around the world: Norway

Student's learning Outcomes

At the end of this chapter, the students will be able to:

- Identify the physical location of Norway.
- Interesting geographical facts of Norway.
- Population Structure and density of Norway.
- Describe the cultural life of Norway under the following headings:
  - a. Religions
  - b. Ethnic groups
  - c. Languages spoken
  - d. Lifestyle and Food


Norway
International Boundary
Province (Fylke) Boundary
National Capital
Province (Fylke) Capital
Road
Railroad
Rivers
0 50 100 Kilometers
0 50 100 Miles
"We become not a melting pot but a beautiful mosaic. Different people, beliefs, different yearnings, different hopes, different dreams" (Jimmy Carter)
Nordkap
Hammerfest
Batsfjord
Vardo
Vadso
Kirkenes
Alta
Lakselv
Tromso
FINNMARK
TROMS
VESTERALEN
Harstad
LOFOTEN
Narvik
Ivalo
RUS-
SIA
Kiruna
Kolari
Bodo
Malmberget
Kemijarvi
Rovaniemi
NORDLAND
Jokkmokk
Mo
SWEDEN
FINLAND
Sandnessjoen
Mosjoen
Kemi
Norwegian
Sea
Lulea
Oulu
Storuman
Skelleftea
NORWAY
Namsos
Lycksele
Kajaani
NORD-
TRONDELAG
Steinkjer
Kokkola
Iisalmi
Umea
Trondheim
Ornskoldsvik
Kuopio
Molde
Vaasa
Ostersund
Seinajoki
Alesund
Harnosand
Aanekoski
Jyvaskyla
Sundsvall
Mikkeli
Floro
Gulf
of
Bothnia
Jamsa
Hudiksvall
Pori
Tampere
Hemsedal
Rauma
Hameenlinna
Lahti
Kouvola
Bergen
Hamar
Mora
Gavle
Turku
Borlange
Helsinki
Gulf of Finland
Drammen
Oslo
Uppsala
ALAND ISLANDS
Tallinn
Haugesund
Vasteras
Moss
Karlstad
Stockholm
Stavanger
Skien
Orebro
Tonsberg
Sodertalje
ESTONIA
Egersund

Unit 5

People and Places around the world: Norway

Have you ever heard of a place where has 6 months of daylight and 6 months of night, where the sun never sets, where colourful display of dancing lights can be seen at night? If not then let's go to the place that is called Norway!

5.1 Norway

Norway is a very long and narrow Scandinavian country situated at the northern tip of Europe. It extends 1770 km from south to north. Located in the Scandinavian Peninsula, Norway shares its borders with Sweden, Finland and Russia and has its coastline on the Barents Sea, Norwegian Sea and North Sea. Its ragged coastline consists of 50 thousands islands. The vikings living in coastal areas named the country Norway meaning "way to the north".

Scandinavia Peninsula

Scandinavia Peninsula is located in the northern part of Europe. It comprises the mainland of Norway, Sweden, Northeastern area of Finland and Denmark.

5.2 Interesting Geographical Facts of Norway

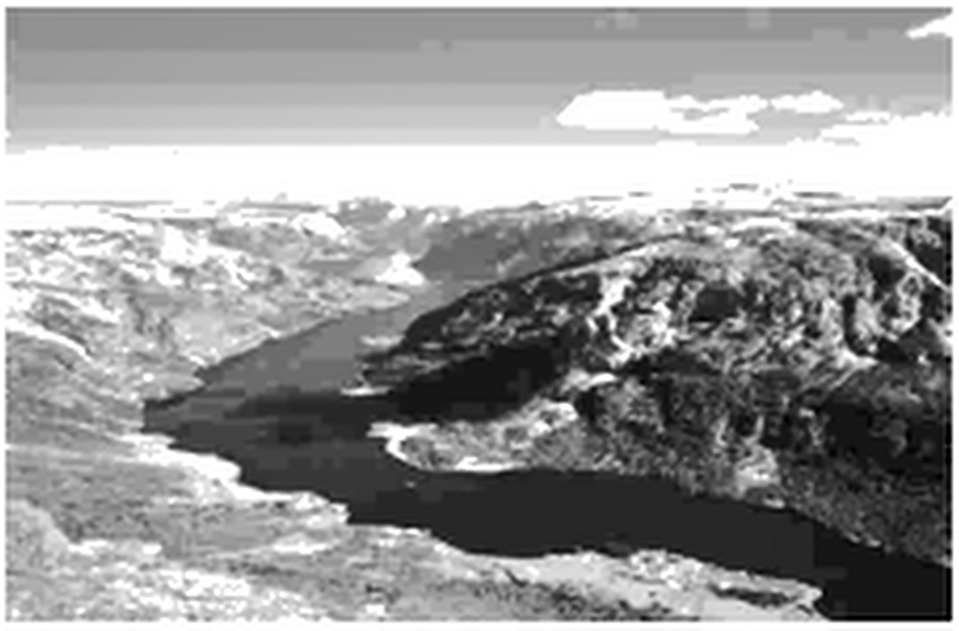
This stunning country has a lot to offer. Stretched mountains, attractive fjords (Feords), ice blue glaciers, deep green forests, fertile valleys, and rich pastures add charms to the beauty of Norway. It was covered by thick ice sheets about 10 thousand years ago in the ice age. When the ice finally melted, its movement across the land formed islands, lakes, rivers, mountains and fiords.

Galdhøpiggen is the highest mountain in Norway

People and Places around the world: Norway

FJORDS (Fe-ords)

Norway is famous for its majestic **Fjords**. Sogne (Sog-nay) Fjord is the biggest fjord in Norway with its 180 kilometer long finger. Geiranger (Gee-anjer) Fjord, surrounded by snowcapped mountains and many waterfalls, is a UNESCO world heritage site.



A Part of Sogne Fjord (Fe-ords)

Geiranger fjord(Fe-ords) of Norway

Norway has 150 thousand small and big lakes.
Mjøsa (Mjosa) is the largest and one of the deepest lake in Norway.

Lake Mjøsa

Glomma River, The longest river of Norway.

Sight Seeing from Trol stigen (Trolls-tee-gan)

People and Places around the world: Norway

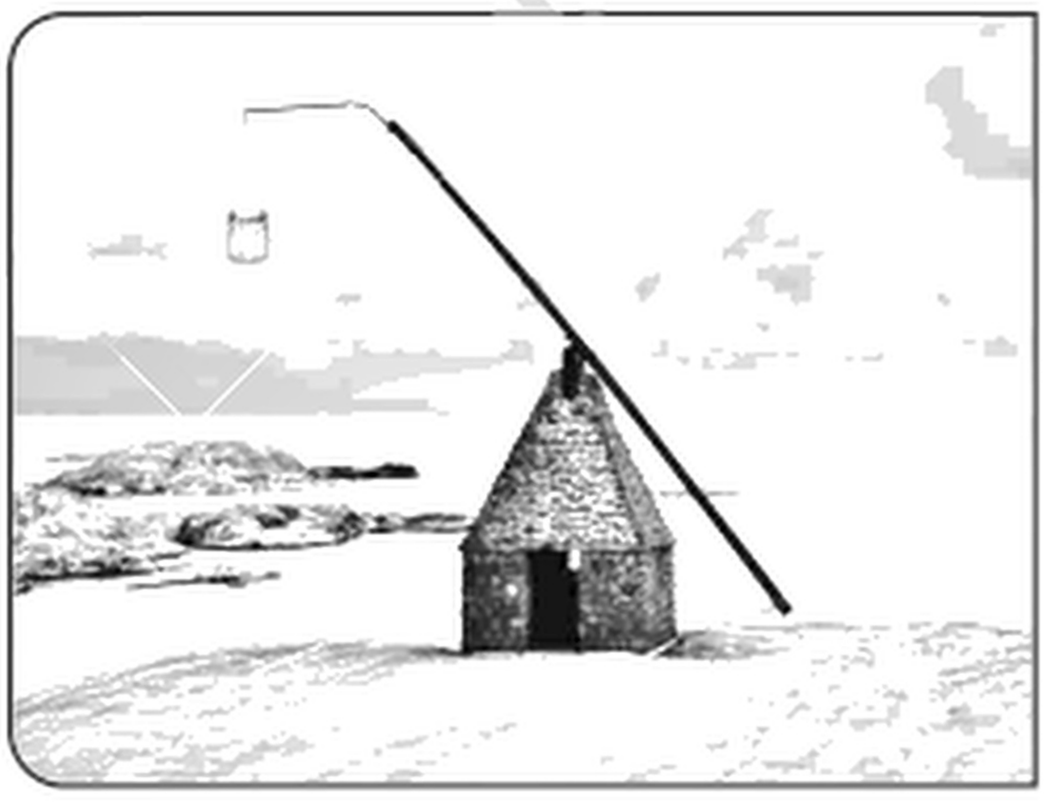
Midnight Sun

Norway is often described as the **"Land of Midnight Sun"** because during the summer months, the sun never completely sets below the horizon in the northern region of the country in summer. So during summer Midnight sun creates an extraordinary sight.

6 months of night and 6 months of daylight country

In the extreme north of Norway (Spitsbergen), they have four months of continuous daylight in the summer, four months of continuous night in the winter and then for two months in the spring and two months in fall, they get a mix. During spring and fall, days and nights get longer and shorter.

Midnight Sun in Northern Norway



World's End: Tjøme (Shome)

Tjøme island in Norway is known as the "End of the World" It is one of the most popular scenic spots of the area.

People and Places around the world: Norway

Aurora Borealis/Northern Lights

Northern lights of Norway add immense beauty to its nature. This natural phenomenon of the wonderful display of mostly strong greenish light sometimes with red, violet or blue colour is called "Aurora Borealis". This occurs due to the interaction between atmospheric gases and charged particles from the sun.

According to Roman Mythology Aurora was goddess of Dawn. Boreas was the god of North wind.

Aurora Borealis (Northern Lights) in Norway

5.3 Population Structure and Density

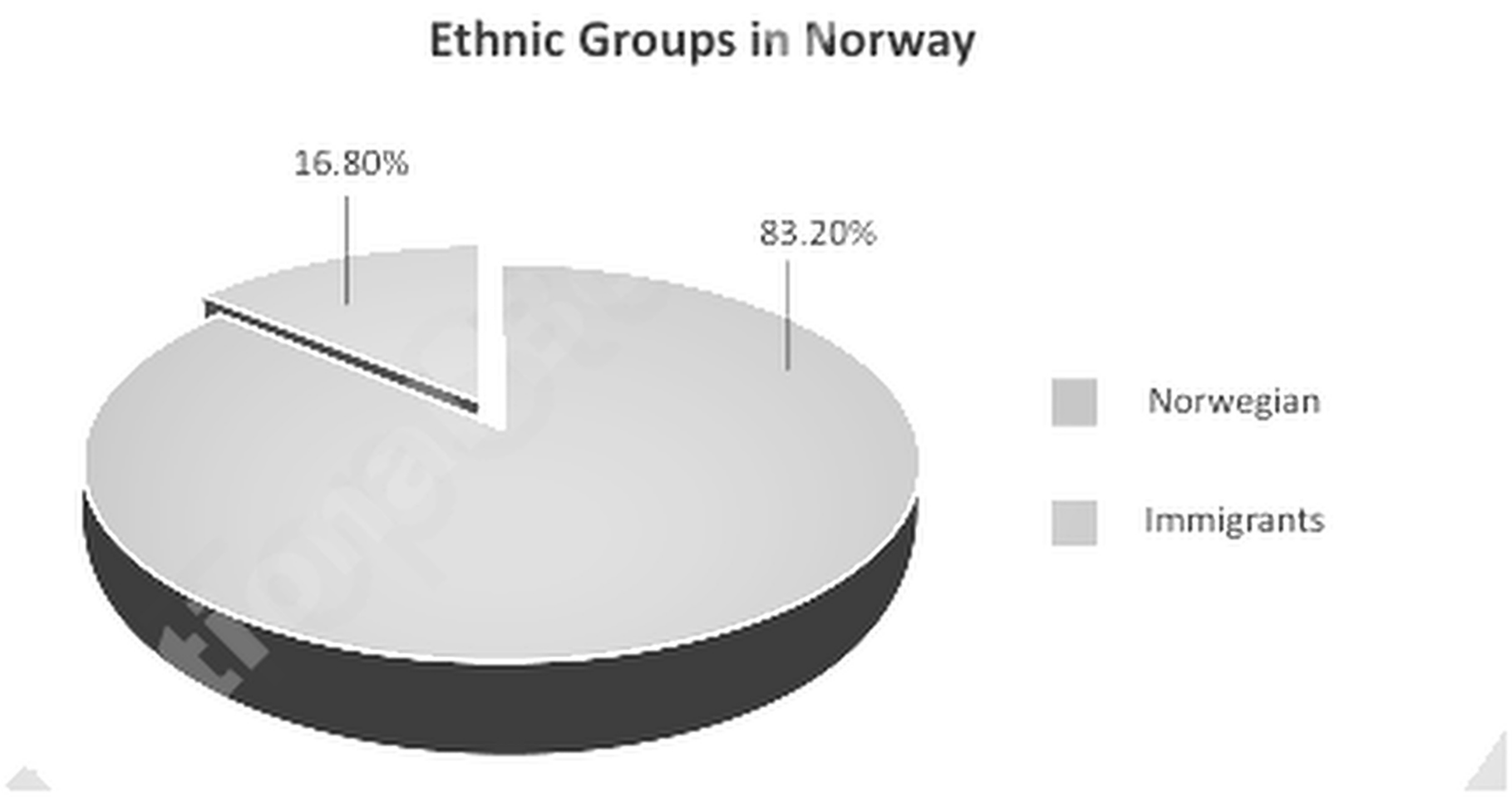
Norway has over 5 million population. The average population density of Norway is 13.9 per square kilometers. 20% of the country's population lives in cities. The southern part is more thickly populated as compared to Northern part of Norway.

The population of Norway is increasing day by day. The composition of population shows that Norwegians are 83.20%, people from other European countries are 8.3% and migrants from other countries including Somalis, Turks, Russians, and Pakistanis are 8.5%. The top most populated cities are Oslo, Bergen and Trondheim.

Pakistanis are the second largest immigrants in Norway. They are playing a very important role in the economy of the country. Pakistani Norwegians have strong presence in higher education, media and politics.

Oslo

Oslo is the capital of Norway. It is a very beautiful and diverse city. It is popularly known for its green spaces, parliament, Sculpture Park, museums and Oslo University.



5.4 Cultural Life of Norway

Norway is well known for its vibrant cultural life. Norwegian history has a great influence on its culture. In the 19th century, the Norwegians promoted literature, art and music to maintain their identity as a nation. Modern expressions of Norwegian culture reflects in Jante law and Constitution day.

People and Places around the world: Norway

- **Jante Law:** Norway is a progressive welfare state. Jante law is an essential part of modern Norwegian culture and emphasize humility, equality, respect and simplicity.
- **Constitution Day:** May 17th is known as national constitution day. Norwegians celebrate this holiday with full zeal and zest.

Children's Day

Constitution day is also celebrated as Children's day in Norway. Instead of military parades, children parades are held throughout the country and the Royal family greet children from their balcony. This custom is very unique to Norway.

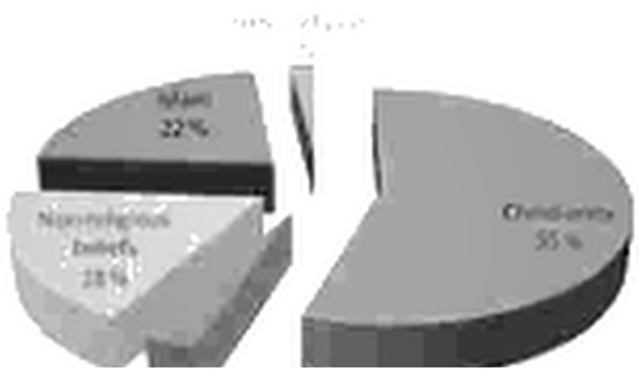
Royal Family

Norway has a constitutional monarchy and King Herald V is the current reigning monarch. While the royal family has limited power, there is deep respect for them in the general public.

Family of Norway

a. Religion

Norway is an open and accepting country with a highly tolerant attitude towards other cultures and nationalities. Religion does not interfere with everyday lives. Christianity is the largest religion in Norway. Norway is secular but diversity of religions can be observed in the society. Islam is one the largest religions in Norway. There are also well



People and Places around the world: Norway

Dressing

Norwegians generally have a simple approach to clothes often focusing on practical and comfortable garments. Similarly, educational institutes usually do not follow a strict dress code. The national costume of Norway is "Bunad". This traditional costume is worn by both men and women only on special occasions. It is a very vibrant piece of art with colorful patterns and rich embroidery.

Bunad, the traditional dress of Norway

The Sami People

The Sami people are local people of northern Europe inhabiting Norway, Sweden, Finland and Russia. However around half of their population lives in almost all parts of Norway. The Sami culture is the oldest culture in northern Europe. Various closely related languages are spoken in Sami region.

People and Places around the world: Norway

b. Language

The Norwegian language is very similar to Swedish. Around 95% of the population speaks Norwegian as their first language. English as a foreign language is taught in the Norwegian schools. The majority of population can understand and speak English fluently.

Norway has a high cost of living and thus is one of the most expensive countries to live in.

c. Lifestyle and Food

The landscape of Norway is extraordinary and so is its impact on Norwegians. Many Norwegian families have a small cottage in the mountains or by the ocean. Use of ferries as means of transportation is very common. Popular food in Norway is seafood, but the most typical food is thinly sliced brown cheese eaten with bread. Other popular dishes include smoked salmon, whale steak and fish pudding. Breakfast usually includes fish, crisp bread or flat bread, yogurt, cheese, coffee and milk. Norwegians have high life expectancy due to their active lifestyle and healthy diet.

Fårikal is the national dish of Norway

Graph showing high life expectancy in Norway

People and Places around the world: Norway

Sports and Outdoor Activities

Norwegians have a deep love for sports and outdoor activities. There is a great variety of fun sports in Norway. Football is the most-liked game, along with that skiing, hiking, fishing, boxing, cycling, dancing, shooting, wrestling, Kayaking are amongst the most popular pastimes. Norway is on top of the world in Winter Olympics.

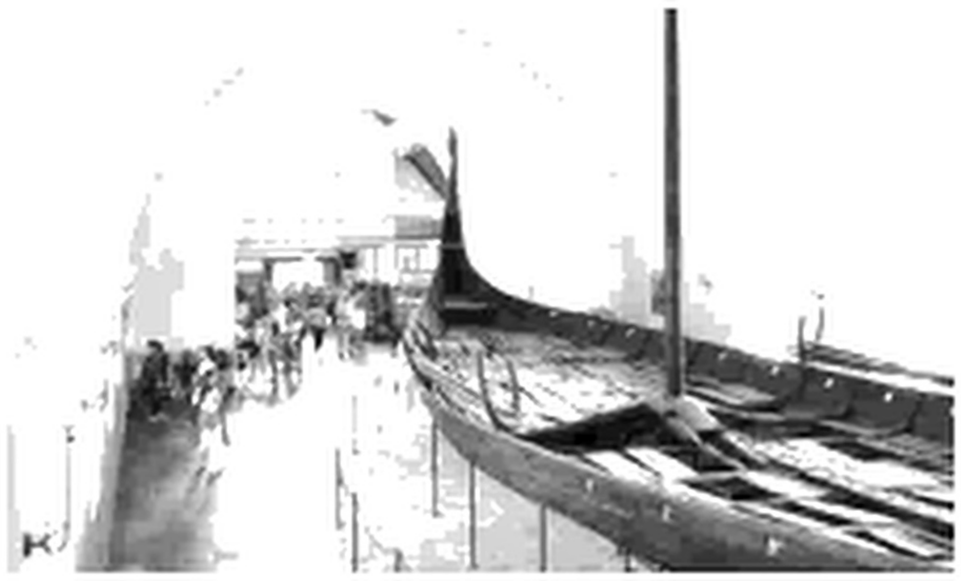
Hik ng

Skiing

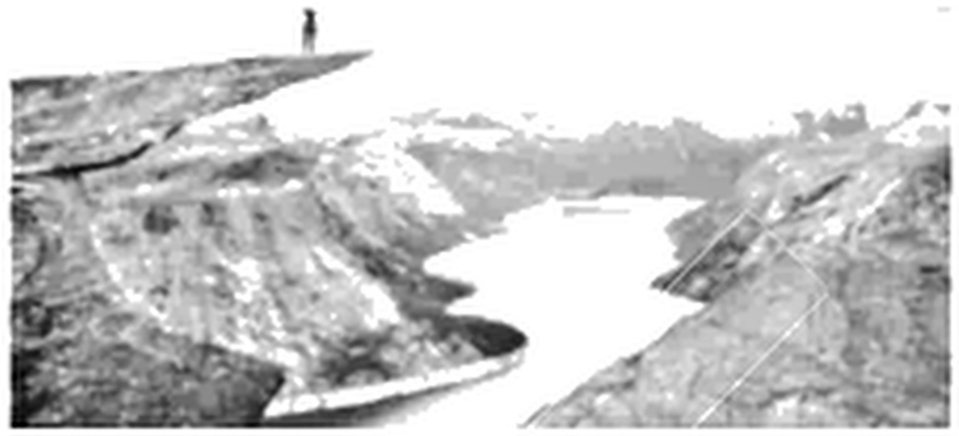
Sledge

Cycling

Attractions of Norway



Vikings Museum



Troll Tunga Cliff

Sever S sters Waterfall, Norway

Ferry (Ship)

Royal Palace of Norway

Activity

- Collect information on other Scandinavian countries and compare your findings with the facts about Norway you learned.
- Draw and colour the map of Norway.
- Find out where else Aurora Borealis occurs, other than Norway.

Glossary

- Peninsula: A piece of land surrounded by water on three sides and connected to land on one side.
- Vikings: Vikings were seafaring pirates and traders who raided and settled in many parts of North Western Europe.
- Fjord: A long narrow, deep inlet of the sea between high cliffs.
- Islets: A very small island.
- Monarch is a sovereign head or king of a state.
- Sledge: A vehicle on runners over snow or ice pulled by animals.
- Ferry: A boat a ship for carrying passengers and goods across the body of boarder.
- Majestic: Showing impressive beauty
- Pastimes: Leisure activity, Hobby, Games

Exercises

Fill in the Blanks

1. Lake ..... is the largest lake in Norway.
2. Norway has over ..... population.
3. Constitution day is also celebrated as .....
4. ..... is the current ruler of Norway.
5. ..... is the capital of Norway.

Choose the Correct Option

1. Norway shares land borders with

   a - Sweden, Denmark and Finland b - Finland, Sweden and Russia

   c - Russia, Switzerland and Finland
2. Which is the oldest culture of Norway?

   a - Sami b - Dutch c - Swedish
3. Common means of transportation to cross the water bodies in Norway is?

   a - Trains b - Ferries c - Airplanes
4. The most popular sports in Norway is

   a - Cycling b - Boxing c - Football
5. The most popular scenic spot in Eastern Norway is

   a - Oslo b - Tjome Island c - Mjosa

Give Brief Answers of the Following Questions

1. What is Peninsula? Name any two countries located on Scandinavian Peninsula.
2. Why is Norway called 'the land of midnight sun'?
3. What is a fjord (Fe-ords)? Name two famous fjords of Norway.
4. In what ways is the Jante Law similar to our culture?

Give Detailed Answers of the Following Questions

1. What are the interesting geographical features of Norway?
2. What is the lifestyle of Norwegian people?

Content Author

Ms. Raheela Awais is a renowned educationist delivering her services in the capacity of Principal in the public sector educational institution in Islamabad. With an excellent academic record, she completed her Master's degree in Geography from the University of Punjab. She also holds a post graduate degree in Educational Planning and Management (EPM).

She has specialized skills in Inclusive Education. As a coordinator, she visited Indonesia for the comparative study and implementation of the Inclusive education project. She also completed a graduate level course from the University of Oslo, Norway in Special Needs Education.

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Ms. Almas Shakoor earned her M.Sc. in Geography from University of Punjab, Lahore and started her career with an Urban Development Project 'Rawalpindi Solid Waste and Environmental Enhancement Project'. In her career, she has worked with UN agencies, International and national non-government organizations and consulting firms in different capacities including as: manager, researcher, trainer, and consultant. Almas has travelled extensively in Pakistan for her professional assignments and has also participated in various international forums and training events. She has successfully demonstrated her professional skills to network with government and nongovernment institutions, academia, media and stakeholders for numerous development initiatives in a collaborative manner.

She has working experience on development related research activities/projects. She has wide experience of project management and best practices in development /NGO sector and development sector in Pakistan. She has also sound knowledge on development issues, public sector agencies, non-government sector and international donor agencies in carrying out public consultations, assessments and preparing strategies, plans and infrastructure projects.
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تو نشانِ عزمِ عالی شان ارضِ پاکستان
مرکزِ یقین شاد باد!

پاک سر زمین کا نظام قوّتِ اُخوّتِ عوام
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شاد باد منزلِ مُراد!

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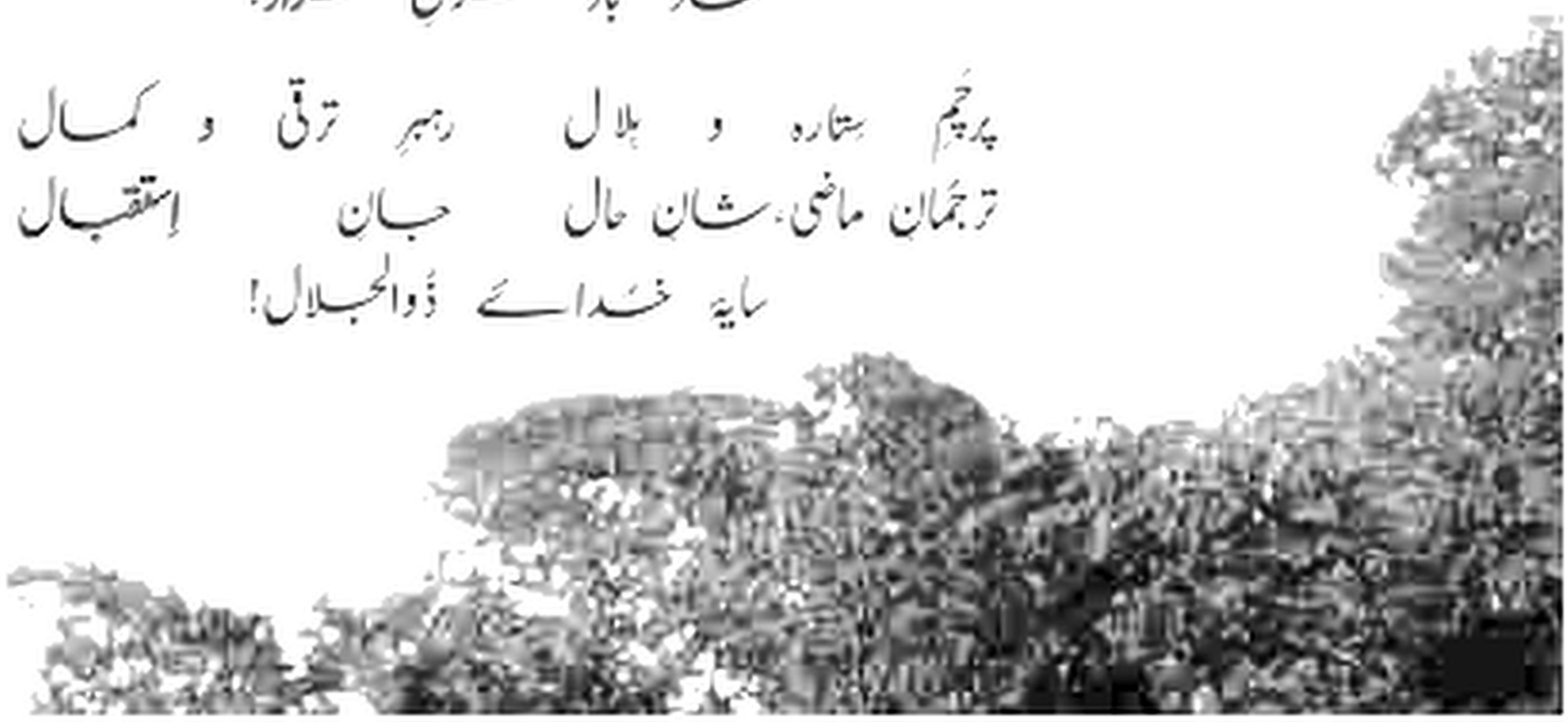
سایۂ خُدائے ذُوالجلال!



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